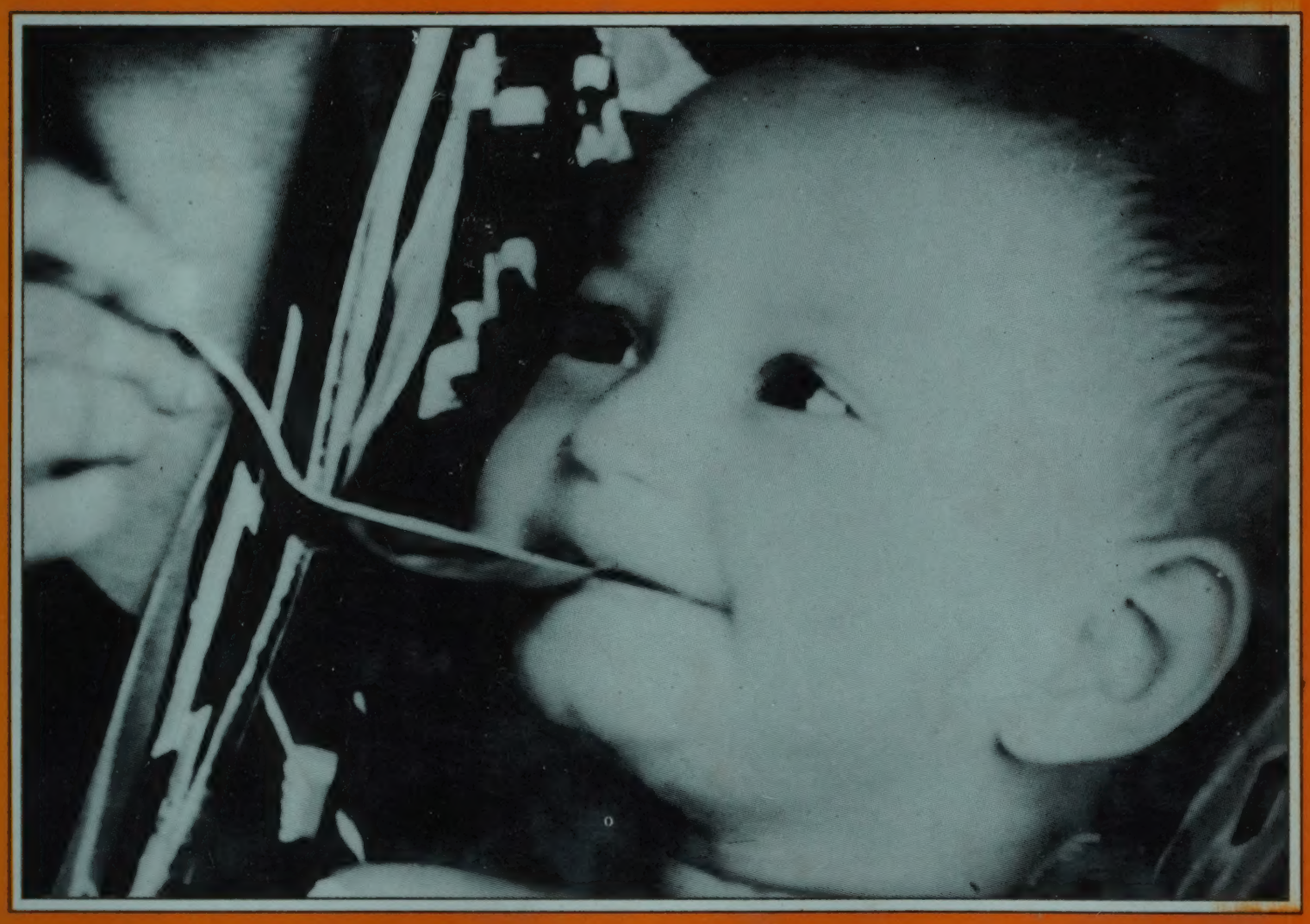
DIARRHOEA IN RURAL INDIA



A NATIONWIDE STUDY OF MOTHERS & PRACTITIONERS

WEST ZONE

01766

his West Zone volume encompases 3
ates — Gujarat, Madhya Pradesh and
aharashtra. It is organised into 3
ain parts:

a Summary section which highlights the knowledge, attitudes and practices among rural mothers, health practitioners and medicine-dispensing retail outlets regarding the causes and prevention of diarrhoea, its symptoms and consequences, the feeding practices followed, treatment adopted, including, especially, the use of oral rehydration therapy (ORT);

the second part fills out the picture for each state in great detail and depth, offering an unmatched and comprehensive basis for effective management of this seemingly innocuous killer disease. The vast amount of information presented on a state-by-state basis serves to pin-point the differences and peculiarities of each, thus offering the opportunity of formulating effective, state-specific action;

the quantitative data generated by the study is given in the third part and complements the qualitative findings of the earlier portion.

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DIARRHOEA IN RURAL INDIA

WEST ZONE

Sushruta, an ancient Indian medical scholar and the father of Ayurveda (1500 B.C.) had prescribed that cholera victims are to be:

> "given to drink a profuse quantity of tepid water in which rock salt and molasses have been dissolved; or clarified water combined with rice gruel."
>
> *(Sushruta Samhita III, verse II)*

"The discovery that sodium transport and glucose transport are coupled in the small intestine so that glucose accelerates the absorption of solute and water was potentially the most important medical advance of this century."

(Lancet, 1978, ii, 300)

Diarrhoea in Rural India

A Nationwide Study of Mothers and Practitioners

West Zone

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Map of India showing States covered in the West Zone

Based upon Survey of India Outline Map printed in 1987.

The territorial waters of India extend into the sea to a distance of twelve nautical miles measured from the appropriate base line.

The boundary of Meghalaya shown on this map is as interpreted from the North-Eastern Areas (Reorganisation) Act, 1971, but has yet to be verified.

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SUMMARY

1. GUJARAT

1.1 MAIN FINDINGS

This section is divided into two parts; the first is a summary of the main findings and the second deals with hypotheses regarding a mother's behaviour during different diarrhoeal episodes.

1.1.1 Causes and Prevention

Mothers and health practitioners shared similar beliefs about the causes of diarrhoea. These were:

indigestion;
hot breast milk;
teething;
change in the weather;
stale food;
polluted water.

Additionally, some mothers in the larger villages, spoke of hygiene. While mothers did not attribute any one particular reason for diarrhoea, health practitioners believed there were mainly two:

a lack of personal and environmental hygiene;
the indifference of the mother to her child.

Chemists did not seem to be very educated about the causes of diarrhoea and believed both in modern (hygiene, etc.) and traditional (teething, change in weather, etc.) causes.

The mother was exposed to two types of health practitioners— the Anganwadis and the frontline workers, and the doctors in the city. These two kinds of practitioners were fairly different, attitudinally. While the former seemed to hold similar beliefs as mothers did, the others seemed to be more "modern" in their thinking and discounted all "traditional" causes. Hence the mother had her traditional beliefs reinforced by the former, and had modern ones superimposed upon her existing beliefs by the latter. Consequently she had acquired a large set of beliefs, which can be classified as follows:

Taught factors:	Hygiene, Food related;
Handed down factors:	Heat, Cold, Superstition,Weather, Teething;
Observed factors:	Teething, Food habits, Weather.

"Taught" factors are those which the mother learned from practitioners; "handed down" factors are those which she learned from her elders; and "observed" factors are those in which she could see a cause-effect relationship. Necessarily, her belief in observed factors was far stronger than in the other two. In order to lend credence to "taught" factors, perhaps the following need to be done:

(i) the factor demonstrated in a manner that the truth is self-evident.
(ii) the factor reinforced simultaneously by all those who influence her, such as chemists, doctors, and mothers-in-law. This may mean that the focus of the communication should be somewhat diffused to include the mother's influencer- group.

Prevention seemed to be a fairly weak concept among most mothers, except those in the Panchmahals district. Most did not believe that diarrhoea could be prevented as it was seen to be an integral part of a child's normal growing up process. Also since most mothers perceived causes to be beyond their control, the concept of prevention seemed to be quite alien to them. Practitioners, on the other hand, believed that many preventive measures were possible and the only obstacle to the implementation of these was the mother's ignorance and attitude of indifference.

1.1.2 Symptoms and Classification of Diarrhoeal Disease

All diarrhoeal episodes can be broadly classified into serious and non-serious episodes, as follows:

SERIOUS	NON-SERIOUS
White diarrhoea (Cholera)	Green diarrhoea
Bloody diarrhoea (Dysentery)	Yellow semi-solid diarrhoea
Watery frequent diarrhoea	Non-frequent diarrhoea

Both mothers and health practitioners classified diarrhoea similarly.

Non-serious diarrhoea was believed to be curable at home and/or to be the type which disappeared of its own accord after some time. Serious diarrhoea, on the other hand, was seen as diarrhoea which needed outside help, either from a herb/witch doctor or from a city doctor.

Both mothers and practitioners were aware of changes in the child's stool (in terms of both frequency and colour) and in the child's behaviour. Often the diarrhoeal episode was seen to turn from mild to severe, i.e., with an increase in the number of stools and the onset of associated symptoms, such as the presence of blood in the stool or vomiting.

The symptoms which would indicate that the disease was very severe are:

a slowing down of the child's movements;
listlessness/intertia; and
dehydration.

Symptoms of dehydration (such as drying up of the skin or the mouth, intense thirst, etc.) were noticed by the mother, but were not consciously linked with a loss of water. Practitioners, on the other hand, were extra-ordinarily well versed with this disease and recognized dehydration signals

very clearly and spoke of symptoms such as a decrease in the pulse rate, sunken fontanelle, etc.

However, there did seem to be a difference in terms of the perceived seriousness of each of the indicators. The following table summarizes the differences:

	Mothers	Health Practitioners
Dehydration	3	1
Frequency and consistency of the stool	2	2
Behaviour (inertia)	1	3

The most worry-causing indicator is ranked 1, the least worry-causing 3.

1.1.3 Consequences

Weakness, dehydration, and death were seen to be the three major consequences of diarrhoea. Weakness and dehydration were seen as the forerunners of death.

Weakness was believed to occur with every episode of diarrhoea, dehydration with any episode in which a lot of water was lost (either in the stool or orally), and death only in severe episodes.

While both mothers and practitioners believed this, practitioners seemed to have a much clearer picture of the consequences. The difference in perceptions of the two could be represented diagrammatically as follows:

MOTHERS
Serious diarrhoea
↓
Decreased food intake
↓
Decrease in energy/weakness
↓
Dryness
↓
Death

HEALTH PRACTITIONERS
Serious diarrhoea
↓
Weakness
↓
Intense loss of water
↓
(dehydration)
↓
Death

1.1.4 Feeding Practices

1.1.4.1 *Older Children*

Mothers' practices and practitioners' recommendations were very similar. Though there were some practitioners who recommended that the food intake should be maintained or increased (and some mothers claimed to actually do so), most recommended a decrease in the intake of food, or stopping it altogether. Most mothers in fact did so. However, liquids were given abundantly.

There seemed to be a shift from solids to liquids since:

> the child's digestive system should not be strained;
> the child had no energy and hence could only swallow liquids;
> the child's appetite had decreased so that it could only drink.

Therefore, the liquids that were given were meant to be energy giving, i.e., doing the work of both, liquids and solids.

As regards feeding of solids, there seemed to be some amount of overclaim. Mothers said that they fed the child a softer, "lighter", more liquid diet (usually rice-based). In fact however, the "diarrhoeal diet" was probably restricted to mild, non-serious episodes, and the child was fed very little (only as much as it would accept).

This was corroborated by practitioners who felt that the dietary shift only occurred in more affluent households.

Liquids were fed for the following reasons:

	Mothers	**Health practitioners**
To quench thirst	√	√
To ease the process of digestion	√	-
To give energy	√	√
To cure diarrhoea	√	-
As an anti-emetic	√	-
To replace lost water	-	√

1.1.4.2 *Neonates*

All mothers continued breastfeeding the baby through the episode. This was sometimes done with a modification in the mother's diet (same as the "diarrhoeal diet" for older children). When breast milk was decreased it was usually supplemented with "top" milk (goat/buffalo), coffee, glucose water, or SSS.

While most practitioners recommended that breast milk should be continued, those in Amreli (except the Anganwadi workers) recommended that it should be stopped. However, it was never stopped to the exclusion of all other liquids.

Kinds of food which were banned by mothers and practitioners alike, were spicy, cold-causing, gas-causing, fried, oily, and "heavy" food.

1.1.5 Treatment

The pattern of treatment seemed to be changing, in that the time frame within which the mother operated seemed to be decreasing. However, her sequence of activities had remained unchanged. Her first resort was always a home remedy, followed by a witch doctor or herb doctor. Her last resort was the doctor in the city.

Her treatment comprised:

feeding liquids;
feeding herbs;
making vows;
administering tablets and liquid medicine.

Practitioners recommended

anti-diarrhoeals;
fluids available at home;
SSS/ORS;

anti-emetics;
antibiotics; and
I.V. drip.

Recommendations varied with the severity of the episode. The commonest remedies seemed to be anti-diarrhoeals and SSS/ORS. Chemists also recommended medicines, but at their own discretion. Only those they felt were important were recommended. Since most did not know about dehydration they might not recommend ORS or SSS and thus they would retard the wide use of such rehydrants.

1.1.6 Oral Rehydration Therapy (ORT)

ORS and SSS were very well known to both mothers and health practitioners. Health practitioners recommended it for virtually every episode, ORS, SSS and a variety of fluids available at home. Chemists knew only of ORS. Only a few chemists had heard of SSS. Both ORS and SSS were seen as very versatile fluids i.e., as energizers, rehydrants, and "sherbets".

1.1.6.1 *SSS*

SSS seemed to have firmly entrenched itself in the homes of village mothers who used it as they believed it to be an effective anti-diarrhoeal and a cooling drink. It was also perceived to replace some of the water loss. This had been taught well, as mothers seemed to be fairly meticulous about the administration of the solution. Hence the major task for communication would lie, not in increasing the awareness of SSS, but in educating mothers about the rehydration properties and the importance of the accuracy of preparation of the solution.

1.1.6.2 *ORS and branded electrolytes*

ORS seemed to be confused with glucose. It was seen as similar to SSS with the only differences being:

that it is packaged (mothers);
that it had many more salts (practitioners).

Chemists claimed to sell a large quantity of glucose as they said villagers used a lot of it, and even kept it regularly at home. This implied that glucose could be used either as a rehydrant or as an ingredient in preparing a rehydrating solution. The use of glucose should be verified at the quantitative stage.

1.2 TYPICAL DIARRHOEA PROTOTYPES

The hypothesized behaviour pattern of mothers during the different episodes of diarrhoea, is given below. The differences in their behaviour during serious and non- serious episodes is illustrated here.

1.2.1 Non-serious diarrhoeal attacks

1.2.1.1 *Diarrhoea due to teething*

Depending upon the perceived cause of diarrhoea, the mother was motivated to action. If the diarrhoea was believed to be due to teething, then the child's

motions (usually green) were ignored. At most she probably softened the food a little. She did not have recourse to any other treatment. After a few days the episode would pass and the child would be left a little weaker, but in much the same condition as before.

1.2.1.2 *Diarrhoea from food*

This type was usually yellow and semi-liquid and not very frequent. Sometimes it could be green if it was due to eating green leafy vegetables. After a couple of days, if the diarrhoea had not gone, the mother started making the food a little softer, blander, and liquid. If, after a couple of days, it still had not gone, the mother usually started feeding the child some herbs and home remedies. If even this did not work, she resorted to a *bua*. By this time she was feeding the child a lot of liquids and SSS or ORS. With this multi-pronged approach, the diarrhoea usually disappeared, leaving the child a little thinner and weaker than before.

1.2.2 Serious Diarrhoeal Episodes

In serious diarrhoeal episodes, i.e., cholera, dysentery or continuous, loose and watery stool, the mother started worrying the day after the disease began. Her action could be as follows:

Recognition
↓
Home Remedy
↓
Change in diet, plus increase in liquid intake
(because of decreased appetite)
↓
Recourse to *bua* and herbs
↓
Recourse to Anganwadi/frontline worker/chemist
↓
Medical aid (doctor)
↓
Increase ORS/SSS, plus anti-diarrhoeals, plus antibiotics

As soon as the mother resorted to help from a medical practitioner she was in fairly safe hands as the practitioner usually advised an intensively liquid diet and ORS. If she went to a chemist en route to the doctor and told the chemist that the episode was severe he would recommend that she visit a doctor. If she went first to a doctor and he recommended a long list of things, then sometimes she would go to the chemist to ask him which medicines she could ignore. At this point the chemist decided, and with that she would go home.

In the event that the child was still not cured, it was hospitalized and given an intravenous drip.

2. MADHYA PRADESH

This summary is divided into two sections. The first section highlights the main findings of the study in Madhya Pradesh with special emphasis on the findings relating to ORT. The next section describes the events that take place through a typical episode of diarrhoea.

2.1 MAIN FINDINGS

2.1.1 Diarrhoea as a Disease

Mothers looked upon diarrhoea as a common childhood problem that could usually be controlled, was not serious, and the prevention of which was not a pertinent issue.

Most medical practitioners took a more serious view of diarrhoea and of the resultant dehydration.

The term used for diarrhoea was "*dast*". Descriptive prefixes defined various diarrhoea.

2.1.2 Classification of Diarrhoea

Mothers classified diarrhoea into different types on the basis of its physical appearance. The formation of stool (watery, with mucus, foamy, with particles, sticky) was one criterion. Colour (yellow, green, white) was the other criterion. The presence of blood was a sign of serious trouble.

Medical practitioners classified diarrhoeal diseases into dysentery, cholera, watery motions, and other loose motions. However, definitions were not sharp and often differed between doctors.

2.1.3 Description and Symptoms

Frequency of loose motion (more than 4-6 in a day) was the main symptom of diarrhoea and also the primary definition of diarrhoeal diseases. Additional symptoms that also helped to determine the type of diarrhoeal disease were the physical appearance of the stools and the presence of vomiting, stomach ache, fever, etc.

2.1.4 Causes and Prevention

Mothers attributed diarrhoeal diseases to teething, climatic conditions and faulty food.

Doctors believed that diarrhoeal diseases were mainly caused by faulty food, lack of hygiene and, to some extent, seasonal variations.

Retailers, like mothers, believed that teething caused diarrhoea.

Mothers saw diarrhoeal diseases as being inevitable and not really serious and therefore had an apathetic attitude to their prevention.

Frontline workers and some doctors stressed on general cleanliness and the use of boiled drinking water for the prevention of diarrhoeal diseases.

2.1.5 Consequences

Mothers believed that the main consequence of diarrhoeal disease was weakness. Death was only a remote possibility, and not a fear.

Symptoms of dehydration had been observed by almost all mothers and recognized as a consequence of diarrhoea, but it was not associated with water loss.

Medical practitioners, other than village doctors, recognized dehydration as an important consequence of diarrhoea.

Mothers had observed and understood that a child lost water as a result of diarrhoea. However, she did not associate water loss with death. Death was believed to be caused by blood loss — either directly, as in blood diarrhoea, or because blood turned into water and was lost. Death was also attributed to other aspects of the diarrhoeal episode, such as fever or weakness.

Both doctors and mothers observed that the child became irritable and listless as a result of diarrhoea.

2.1.6 Feeding Practices

A mother's first reaction to the onset of diarrhoea was to alter the child's diet to some extent.

Almost all respondents - mothers, doctors, retailers— had similar views on diarrhoeal diet. Spicy and "heavy" (difficult to digest food was prohibited, and quantities per meal were reduced, although some compensated by increasing the number of meals.

Liquids were a traditional and integral part of a diarrhoeal patient's diet.

Neonates were given breast milk as usual since it was usually their sole form of sustenance. However, the mother controlled her own diet by avoiding "heavy" and spicy foods.

Once a diarrhoeal episode was over (loose motions having ceased) a child was brought back to the normal diet within a day or two. No nutritional supplements were given, with the exception of mothers from one region who gave a traditional food item for improving health.

2.1.7 Treatment

Traditional remedies were known to most mothers and therefore, we assume, practised. However, mothers claimed to rely mainly on medical practitioners.

Practitioners and retailers complained that mothers only brought children in when the diarrhoeal problem had persisted for several days or turned serious, making treatment difficult.

Traditional remedies comprised mainly of herbs and leaves that were found in the region.

Medical practitioners prescribed tablets, syrups, mixtures, and "powders". These powders were often ORS packs.

2.1.8 ORT

2.1.8.1 *SSS*

Knowledge of the sugar salt solution was almost non-existent among the mothers, with a few exceptions in one region.

Practitioners in a few areas had sketchy knowledge of SSS while those in other areas had no knowledge.

Amongst practitioners who did know of SSS, the formula was often incorrect. Some doctors did not appear to believe in its efficacy.

Some retailers were aware of SSS, but the formula varied. They appeared to favour branded ORS over SSS.

2.1.8.2 *ORS*

ORS was often given to mothers by practitioners.

Mothers believed that ORS contained glucose and some fruit such as orange.

Frontline workers gave out ORS powders in small doses or sometimes mixed it themselves and administered it.

2.1.8.3 *Branded Electrolytes*

Electral was easily the best known branded electrolyte.

Mothers had used branded electrolytes. They spoke of "orange, green and blue coloured powder" packets given for diarrhoeal diseases.

The dose was usually one teaspoon to a glass of water.

Doctors recommended branded electrolytes when they believed a patient could afford it.

Retailers were enthusiastically in favour of branded electrolytes.

2.2 TYPICAL DIARRHOEAL EPISODE

The following is a summary of the sequence that a typical diarrhoeal episode would follow in a typical village of Madhya Pradesh, based on the findings of this study.

The mother would notice that her child had passed stools more frequently than normal (2-3 times). These stools would also be of a looser consistency than normal.

Initially, she would let things be, hoping that this was a passing malfunction which would set itself right.

If the problem persisted up to the next day or even the day after and if there appeared to be either an increase in the frequency or in the "looseness" of the stools, the mother would admit that her child had "loose motions".

She would then study the stools. The colour would indicate the type of loose motion problem that had set in and possibly the cause. The consistency would give an indication of the gravity. Thus, watery motions, foamy motions, and the presence of mucus would alert the mother to the possibility of the attack being a serious one.

She would try and ascertain the cause. If she could attribute it to teething or to a change in the season, she would take it in her stride and take mild measures such as a change in the diet and some traditional remedies.

If neither teething nor seasonal changes adequately explained the problem, she would attribute it to food or some other related problem. She would

now be on her guard, since the episode could not be strictly called a "normal loose motion problem".

She would check for the presence of other problems such as stomach ache, fever, vomiting, etc. The presence of any of these would immediately cause concern and possibly have her looking for help.

The first measure in any case would be to change the child's diet. He would be put on a light diet of items such as rice, curds, "*khichri*", etc. The food would be bland. Liquids such as buttermilk, tea, and dal water would also be given.

If the child was being breastfed, she would eliminate spice and heavy food from her own diet and continue breastfeeding the infant.

If the changed diet brought no sign of arresting (if not reversing) the diarrhoeal trend, she would resort to traditional remedies.

The mother would try traditional solutions made of herbs and leaves which would usually be ground and made into pastes with other items such as milk, honey, water, etc.

If the problem persisted in spite of the diet and the traditional remedies, the mother would resort to one of the following, depending on her beliefs.

> She would offer prayers to the local godman or take steps to counteract the influence of the "evil eye" that had spoiled the child's health; or alternatively, she would approach a medical practitioner.

In either case, if the child showed signs of becoming very weak or if the diarrhoeal episode took a turn for the worse (blood in stools, watery and frequent stools or some other signs of abnormality) she would probably by-pass the other routes and go straight to the medical practitioner. The final faith did lie with the doctor but there seemed to be some resistance because of the time, cost and effort involved.

The mother (or by now, parents) would approach the local village doctor or frontline worker for help if the child showed no signs of improvement for about a week to ten days (based on doctor/retailer reports).

The village doctor would usually put the child on tablets to stop the motions. A few of them would give ORS packs or doses, too.

Frontline workers and town doctors would normally give medical tablets as well as ORS.

Once the diarrhoeal episode was brought under control, the mother would continue a light diet for a day or two and then move the child back to the normal family diet.

Diarrhoeal diseases, their consequences, causes or prevention would then be put away from the mind till the next episode.

3. MAHARASHTRA

In this section, the first part comprises a synopsis of the major findings and the second, various hypotheses about a mother's behaviour when different diarrhoeal episodes occur.

3.1 MAIN FINDINGS

3.1.1 Cause and prevention

The causes of diarrhoea are believed to be many. A summary table across target groups is presented below:

	Mothers	Health Practitioners	Retailers
Hygiene	√	√	√
Food habits	√	√	√
Heat	√	-	√
Evil eye	√	-	-
Change in the weather	√	-	√
Specific season	√	√	-
Teething	√	√	-
Water	√	√	√
Weak digestive system	√	√	-
Mother's breast milk	√	√	-

Since child diarrhoea is a very frequent and common disease, no one specific cause was attributed to it. It was usually seen as fairly inevitable, especially among mothers and to some extent among health practitioners.

Practitioners were more aware than mothers regarding the various causes and cited many ostensibly scientific reasons, such as germs and bacilli. However, both mothers and practitioners shared the same belief system i.e., a belief in a weak digestive system. This seemed to be a major factor which was thought to cause diarrhoea.

A fairly frequently used fall back option for mother's, i.e., a rationalization, was the evil eye which they believed was cast upon the child. The only way of removing this was with the help of a *vaidya* or a witch doctor. While diarrhoea due to other causes could be prevented, it did not seem possible to prevent diarrhoea which was brought on by the evil eye.

3.1.2 Symptoms and Classification of Diarrhoeal Diseases

Diarrhoeal disease could occur with or without accompanying signs. Plain or

ordinary diarrhoea was defined as loose, watery stools, usually more frequent than once or twice a day, and either yellow or green in colour. Attendant signs which transformed the disease into an unusual or extraordinary one, were those such as:

vomiting;
the presence of blood or mucus in the stool;
worms.

Mothers classified diarrhoeal disease in four ways:

i) colour;
ii) accompanying symptoms;
iii) frequency of occurrence;
iv) severity of occurrence;

Mothers described the disease by using analogies of food.

Health practitioners seemed to adopt a cause-based classification with the classifications of MBBS being more textbook-oriented than their non-MBBS counterparts.

Stools with attendant symptoms were believed to be more worrying than ordinary stools and hence the former were usually seen as being worthy of a visit to a doctor.

3.1.3 Consequences

The consequences of diarrhoea were seen to be, by all groups, as

i) weakness;
ii) dryness or dehydration;
iii) death.

Only mothers did not clearly see the link between the three consequences. These were seen as fairly separate and unrelated in their minds. Death was thought to be an unusual occurrence, unlike weakness and dehydration.

A diagrammatic representation of these consequences by each group is given below:

Mothers	**Health practitioners/ Retailers**
1. Decreased weight/dryness	1. Weakness
↓	↓
2. Weakness + further dryness	2. Dehydration
↓	↓
3. Death	3. Death

The important difference is that health practitioners and retailers perceived the three to have a cause, and effect relationship, while mothers did not. The diagram indicates the sequence of effects on the child's health.

3.1.4 Feeding Practices

Since the basic belief system was similar for all three groups, feeding practices were very similar. Soft, bland, easily digestible food, usually made from rice was recommended and given to children, as this was perceived not to burden

the child's already weak digestive system.

"Heavy" food such as oily, fried food, or spicy/pungent food were avoided, since these were believed to exacerbate the diarrhoea.

The shift in diet seemed to be from wheat and barley, both of which are cereals which cannot be softened very much, to rice. Rice was eaten in various ways, the most common being as a very liquid gruel. Also, the water of rice or *kanji* was perceived to be good for a diarrhoeal episode.

Though fluids were continually fed to the child by most mothers, and were strongly advocated by virtually all practitioners and retailers, there were some among every group who did not follow this practice. Some beliefs that went against feeding the child liquids or decreasing its intake of them were:

i) an excess of water would lead to *panthari*, a disease (mothers);
ii) an excess of water would increase the vomiting and diarrhoea (mothers);
iii) specifically milk was seen to breed germs of dysentery and diarrhoea (practitioners);
iv) milk was difficult to digest. Outside or "top" milk, i.e., buffalo/cow milk was more difficult to digest and hence should either be stopped altogether or diluted with water and fed (mothers/practitioners).

Post-diarrhoeal feeding comprised either continuing a soft liquid diet or of putting the child on to its normal/staple diet. Some practitioners recommended a high-protein diet of food such as Proteinex, vitamin supplements, etc.

3.1.5 Treatment

While mothers didn't treat weakness specifically, the loose motions and dehydration were remedied. Dehydration was treated, perhaps unknowingly, with various fluids available at home, ORS mixtures and, in some cases, SSS.

Traditional home remedies, such as removing the evil eye, feeding the child, or massaging its body with various herbs and oils, were followed by mothers. Practitioners and retailers hardly believed in such remedies and hence recommended only medicinal remedies (usually allopathic).

Medicinal remedies prescribed by practitioners and advocated by retailers usually comprised the following:

i) anti-diarrhoeals;
ii) anti-emetics;
iii) antibiotics;
iv) rehydrants.

Retailers claimed to recommend scheduled drugs rarely, especially for children.

3.1.5.1 SSS

Mothers were fairly conversant with this concept, which they claimed to have heard of through:

i) doctors;
ii) their elders;
iii) the radio.

Most practitioners were aware of SSS and claimed to prescribe it. Retailers on the other hand, were fairly ignorant.

Both practitioners and mothers innovated on the SSS and added lime, etc., to make the taste more acceptable. It was seen as a cooling drink (*'sherbet'*). It was believed by practitioners to combat dehydration quite effectively, though lacking the salts that Electral and other such ORSs have.

Since some mothers heard of it from their elders, its use was probably spreading by word-of-mouth. Since hearsay is one of the major motivators in the use of any products, perhaps SSS was on its way to being a "traditional" or home remedy.

Among some practitioners and retailers, SSS suffered from a lack of image as it was seen as mild, cheap rehydrant, hence, a poor man's ORS. One retailer said that even if he was told about SSS he would not prescribe it, since it would mean a loss of the revenue he would get if he recommended ORS, like Electral, instead.

SSS was prepared in a variety of ways, usually in fairly accurate proportions. Among practitioners, Anganwadi workers seemed to be more aware of this than others.

3.1.5.2 *ORS and Branded Electrolytes*

The use and awareness of the government ORS pack was fairly low, unlike that of Electral. Mothers spoke of Glucose (perhaps referring to Electral), while the other groups spoke of Electral and similarly branded electrolytes.

Usually, a spoon of powder in a glass of water was to be administered to the child a few spoonfuls at a time.

Mothers recognized ORS packets by visual means, such as identifying the shape and the colour of the packet. Also the taste of the product was remembered and recognized.

ORS was perceived as a very versatile product which could be used to control:

vomiting;
weakness;
dehydration.

It was also perceived as a revitalizer and energizer. Some thought, it even stopped loose motions.

Retailers especially favoured such products, as it implied an increased revenue.

3.2 TYPICAL DIARRHOEAL PROTOTYPES

Broadly, diarrhoeal disease seems to be classified into three kinds:

i) severe
ii) moderate
iii) mild

The sequence of actions in the case of each type is hypothesized to be as follows:

3.2.1 Severe Diarrhoeal Disease

A severe diarrhoeal episode is perceived to be one which is accompanied by

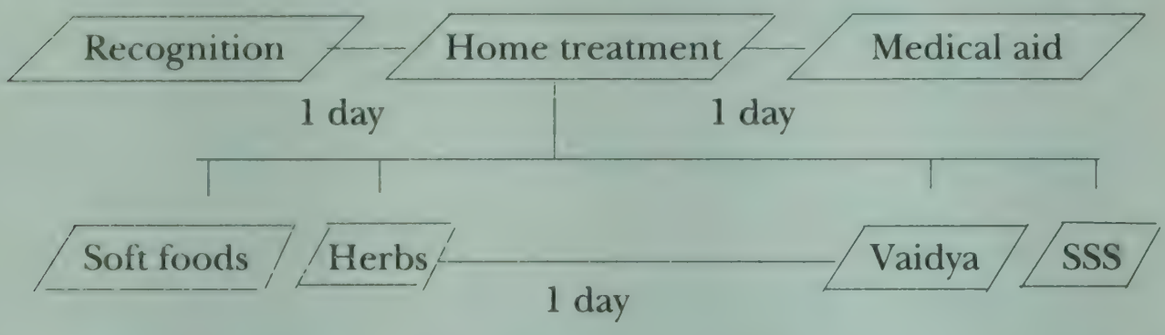
one or both of the following signs:

i) vomiting; and
ii) blood in the stools.

Additionally, a severe episode was characterized by an incessant flow of loose motions.

This kind did not seem to begin on its own, but rather deteriorated from a mild episode. The presence of blood, however, was sometimes seen on its own, and though not an immediate motivator to action, was worrying.

The sequence of activities is probably somewhat as follows:



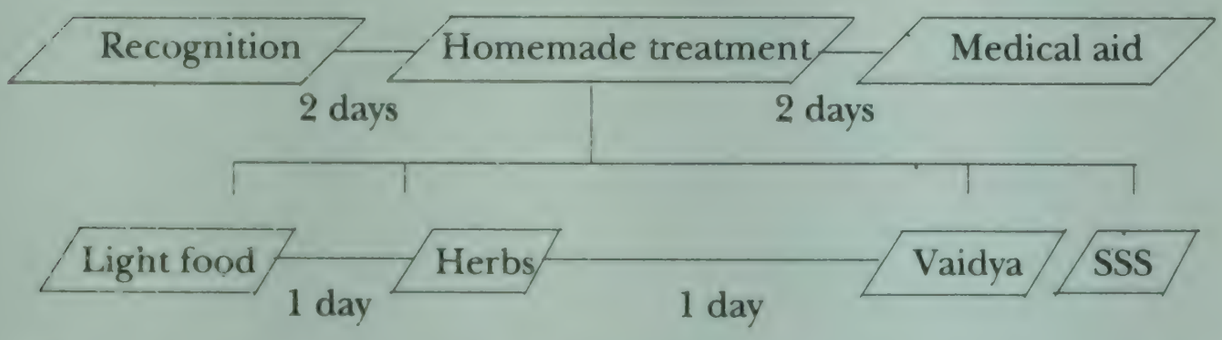
The child was rushed to the nearest medical practitioner when all else had failed and it had started showing signs of dehydration, e.g., wrinkled, black skin, sunken eyes, etc.

In these cases the medical practitioner usually advised a host of remedies—anti-diarrhoeals, anti-emetics, anti-pyretics, and especially rehydrants. Electral was recommended and in some cases almost forcibly administered. The chemist had little or no role to play in this type of disease.

3.2.2 Moderate Diarrhoeal Disease

This type was characterized by fairly high frequency of motions (approximately 8-10 a day), and by the stools being watery and either yellow or green. It might or might not have the presence of mucus.

The action of the mother is hypothesized to be as follows:



The mother viewed this episode less anxiously than the one she considered severe. She would go through her entire repertoire of treatment before resorting to medical aid. Anganwadi and Balwadi workers would be consulted before doctors.

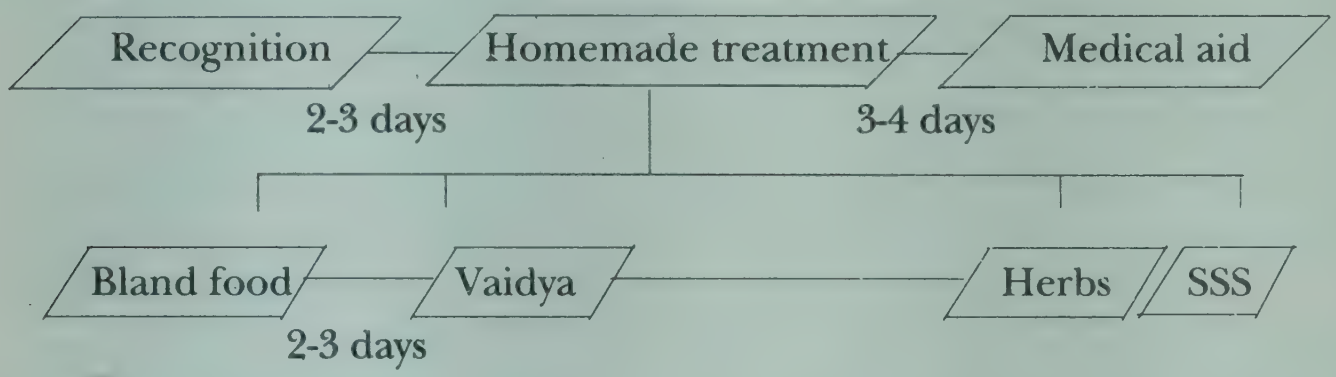
In some cases she might herself select her own medicines, identifying the products either through the packs or the names. Familiar and trusted medicines would be glucose, Furoxone, Erestoquin Kaltin, Chlorostrep etc. This behaviour was further corroborated by retailers. Packs with mnemonics, especially of babies, were quickly and easily identified.

The mother then brought home these medicines and fed the child in the dosage she deemed correct.

Liquids and SSS were fed in small quantities all through the day from almost the beginning of the episode.

3.2.3 Mild Diarrhoea

The behaviour pattern postulated is as follows:



This type was described as yellow (or green) loose motions which were more often than 2-3 times a day (the upper limit for normalcy) and were fairly liquid. If caused by the evil eye, the only cure was believed to be the *vaidya*. If due to teething, the child's diet was softened and a decreased quantity given at a time (of either solids or if only being fed breast milk, of that). If caused by a change in the weather or because of heat in the mother's milk, then the whole system swung into action, from the *vaidya* to the herbal/SSS treatment.

Such diarrhoeal episodes were not treated as serious and hence were usually ignored or treated extremely casually. Resultantly, the time lag (between recognition of the disease and medical aid) was fairly long. In some cases, mothers did not resort to medical aid at all, as the episode was cured with their ministrations.

Health practitioners and retailers did not see this type frequently. Those who had experience of this kind of diarrhoeal disease did not even prescribe ORS, feeling that the disease, and hence the dehydration, was too moderate to merit an ORS.

GUJARAT

1. INTRODUCTION

1.1 STATE PROFILE

Gujarat lies in the north-west corner of India and is bounded on the north-west by Pakistan, on the north by Rajasthan, on the east by Madhya Pradesh and on the south by Maharashtra. It comprises three geographical regions:

(i) The Peninsula, traditionally known as Saurashtra, comprising six districts;
(ii) Kutch on the North-East, with only one district; and
(iii) The Mainland, comprising twelve districts.

Each of these regions was sampled for the purpose of the study.

The largest rivers in the state are the Sabarmati, Mahi, Narmada and Tapti. Crops grown in the state are Millet (accounting for 24% of the country's total food output), Wheat (20%), Rice (14%) Barley, (12%), and Maize (8%). The two major cash crops are cotton and groundnut.

Most parts of the state have rigorous extremes of climate, which are softened to a marginal extent by the Arabian Sea and the Gulf of Cambay in the west, and the forests of the east.

1.2 DISTRICT PROFILE

Of the 19 districts, 3 were selected as centres for research, one from each of the three major geographical divisions. The research centres are given below:

District	**Base Town**	**Villages**
Amreli	Amreli	Sarambhda*
		Khijadia
Kutch	Bhuj	Khavda*
		Meghpar
Panchmahals	Godhra	Rampur*
		Darunia

Villages marked with an * are larger villages with a population ranging between 3000 and 4000. The others are smaller and have a population ranging between 1000 and 2000.

A brief comparison of the three districts has been made to provide some idea of the levels of economic development in each district. The parameters used are:

levels of economic development (indices on the basis of an all-India index = 100);

population;
percentage of urban population of the total population in each district;
percentage of villages electrified under the rural electrification scheme.

	Economic Development	Total Population	Urban Population	Villages Electrified
	(index)	(lakhs)	(%)	(%)
Amreli	109	11	20	97
Kutch	107	10	26	74
Panchmahals	47	23	11	54

Source : CMIE, Profiles of districts.

Kutch and Amreli seem better off than Panchmahals on every consideration. Panchmahals has the largest population and the lowest urban population, implying that it has a larger number of villages than either of the other two districts.

1.3 VILLAGE PROFILE

Two estimates of population, one from the sarpanch or village headman, and one from the 1981 census are given below:

District	Village	Population 1981 census	Reported
Amreli	Sarambhda	3508	5000
	Khijadia	1585	2200
Kutch	Khavda	3316	3000
	Meghpar	1432	1260
Panchmahals	Rampur	3565	10461
	Darunia	1332	1500

All the larger villages had a provision store. Sarambhda had one health centre and Khavda had a PHC. Interestingly, all villages had some kind of medical cover, either in the form of private doctors or doctors belonging to government institutions.

Anganwadi workers were present in virtually all the villages, but were thought to be fairly ineffective. However, through actual observation it was determined that Anganwadis are doing a fairly comprehensive job as they are equipped with charts, aluminium glasses (500 ml) and double sided plastic spoons. They also follow up cases of diarrhoea through entries they make in exercise books. In the Panchmahals district some spoke of having received training from CARE, the American voluntary agency.

In these villages, education is rare and hence a person who is educated is treated with great respect.

The houses are of two kinds — those built of concrete and those built of thatch and mud. The type of house serves to some extent as an indicator of socio-economic status and the standing of the person in the village. Most houses are fairly well-kept and usually have some religious symbol above the doorway, such as images of various gods, etc.

The district of Kutch is a little different from the rest as it has many "international" links, i.e., people travelling to the Middle East for work and a large amount of smuggling activity. Meghpar, the smaller of the two villages in this district, had the unusual phenomenon of having most of its residents working in the Middle East. The one doctor in the village seemed fairly competent, and the 'Sarpanch' very Westernized. At the latter's house a portable 2-in-1 was visible as also imported undergarments, branded, up-market washing powders, and soaps. toilets were installed in the Sarpanch's house but people usually did not have toilets attached to the house. The Sarpanch was planning to introduce the system of Toilets and was planning the village's drainage system. In most villages toilets did not exist and people usually went to the fields to defecate. Garbage and infant stools were also disposed of in the same manner, indicating that concepts of sanitation and hygiene were not very well formed.

In the district of Amreli, there seemed to be far more casteism (in the smaller village) than in the other districts. Though all the castes live together, i.e., not in separate clusters, if a person had even drunk tea at a lower caste or untouchable's house she would not be allowed to come near an upper caste person.

In both the base towns of Amreli and Godhra (Panchmahals district), people claimed that the municipal water was extremely unsafe to drink, as the reservoir was next to the municipal garbage dump.

Information in these villages was disseminated largely by word-of-mouth and through radio and television. The latter existed only in the larger villages.

2. MOTHERS

2.1 RESPONDENT PROFILE

Respondents belonged mainly to joint families and usually had two or three children on an average. All mothers had children below two years of age. Most respondents were working mothers. While a few worked in the fields, most worked in other occupations, such as looking after livestock, spinning thread, etc.

While at work, mothers usually left their children behind, either with someone or on their own. Sometimes if the children were very young, they were taken along.

They lived in semi-finished, adobe houses which comprised one or two rooms at most and had animals living within the house. Toilets were almost always separate from the house and most respondents defecated in the fields.

Listening to the radio seemed to be their major source of entertainment.

2.2 CAUSES OF DIARRHOEA

Diarrhoea was ascribed to one or more of the following causes. The seven listed below are fairly broad categories and cover other "sub-causes":

i. Teething;
ii. Heat;
iii. Cold;
iv. Food related;
v. Hygiene;
vi. Superstition;
vii. Weather.

Teething: Especially the diarrhoea which was green in colour was thought to be caused by teething. Diarrhoea at this stage of an infant's growth was thought to be very natural. However, mothers did not elucidate upon the way in which they believed teething caused diarrhoea, perhaps because it was such a well accepted fact that they did not seek to question it and hence to find the actual reason. In this case it was taken as another indicator of the child's development.

Heat : Any excess of heat in the system, generated either internally by specific food or externally by the sun, was perceived as a causal factor. The onset of summer or the breast milk of a mother who had been working too long in the sun was also thought to introduce heat into the system and hence cause diarrhoea.

Cold : Similar to the concept of heat, a parallel concept of cold existed, especially in the districts of Bhuj and Amreli, which have a cold winter. Cold generating food, or an intense cough and cold was believed to cause diarrhoea.

Food related : This was perhaps the most widely believed cause, probably because it seemed the most likely and obvious. Since diarrhoea was understood to mean an upset stomach, this organ and its biological activity would naturally be the prime cause. Food which cause gas (such as potatoes) or other foods which were difficult to digest, led to indigestion, which in turn led to diarrhoea. These were food such as ghee or *golpapdi* (made from jaggery and spices).

Green, leafy vegetables were also thought to be an important factor. The "carrier" could either be ingested directly by the child or indirectly through breast milk. Breast milk was commonly believed to be the source of infant diarrhoea and any alteration in the mother's body temperature or diet could be a causal factor.

Hygiene : Flies on food, mosquitoes, raw or improperly cooked food or impure, unboiled water were also perceived to cause diarrhoea. Uncleanliness, either personal or environmental, was also mentioned. These mentions were restricted largely to Khijadia and Rampur villages, the two bigger villages in the districts of Amreli and Panchmahals respectively. Some in the district of Bhuj too mentioned uncovered food.

Superstition : Possession by an evil spirit, or the casting of the evil eye upon the child, or the child falling from the bed onto the floor, were also thought to cause diarrhoea.

Weather: The rainy season and the summer season were believed to be the two seasons when diarrhoea was most frequent, as also a change in the weather, i.e., from one season to another. Some felt that diarrhoea was endemic and so could begin in any season.

Other causes : Other causes which were mentioned were worms, the onset of an epidemic, or as an accompaniment to other diseases such as chickenpox, fever, etc.

2.2.1 Classification of Causes

As in the case of Maharashtra, these seven broad causes can be classified into three explanatory factors:

a. those which are taught;
b. those which are handed down; and
c. those which are observed.

The classification of causes by factor type would probably be as follows:

Taught	:	Hygiene, Food related.
Handed down	:	Heat, Cold, Superstition, Weather, Teething.
Observed	:	Teething, Food habits, Weather.

The causes which the mother herself could observe, such as teething, food habits, or a change in the weather, would be in her mind the most credible ones as they were not only clear to her but were also ratified by those who "influenced" her, i.e., doctors, mothers-in-law *et al.* Such "observed" factors could also be classified as easily discernible ones. Those which were not so

evident were the ones she had been taught (by doctors, village workers and such like) or had been handed down by her mother and grandmother and which she had accepted unquestioningly. If the causes were to be communicated to her in any credible fashion, they would need to be, either:

i. Demonstrated in such a manner that the truth became evident;
ii. Reinforced simultaneously by all those whose opinion influenced her, such as doctors, chemists, and mother-in-law.

2.3 ATTITUDES TO PREVENTION AND CURE

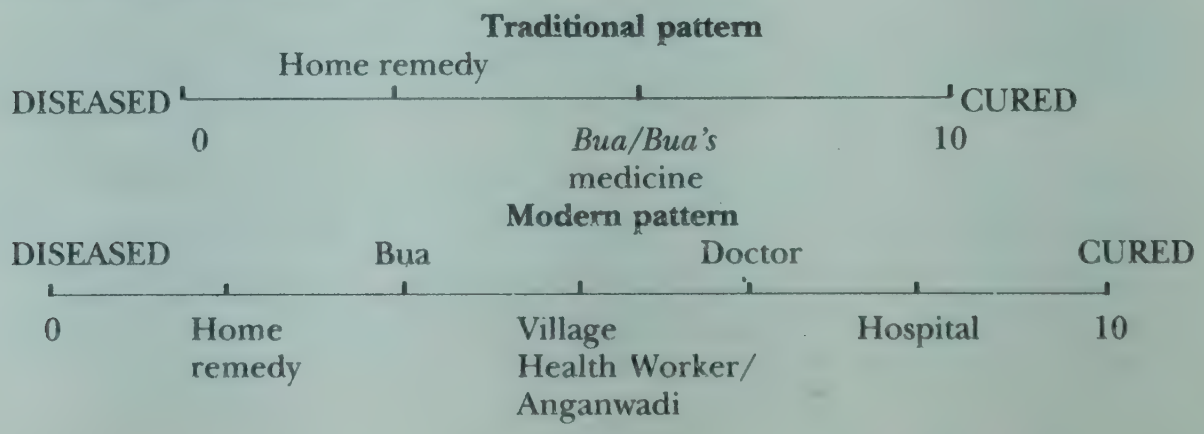
The concept of prevention seemed to be the most clear in the Panchmahals district where mothers spoke of:

bathing the child so that it remained clean;
taking care of the child;
looking after its eating habits, i.e., feeding it on time and feeding only certain foods (which are easy to digest);
boiling and filtering the water; and
praying and making vows.

Despite knowing about the preventive measures that were possible, it was highly likely that these were not followed at all. This could be attributed to the difficulty of putting such measures into practice, because of the environment and the lack of infrastructure.

Cure was brought about in many ways. The mother's first resort was whatever she could do at home. This would constitute going to the jungle to pluck herbs and fruits, preparing remedies at home, consulting her in-laws and other elders, consulting a *bua* (a witch doctor), etc.

Such witch doctors "prescribed" various herbs, (powdered and made into paste before being fed to the child) made sacrifices of a cockerel or a goat, and removed the evil eye with incantations over food items or by taking dried red chillies and taking them round the person's front first and then the back. Every village, however educated about the causes and the remedies, still had a fairly strong belief in the *bua*. This would imply that though villagers were fairly amenable to new ideas and influences, they added them to their existing set of beliefs and thereby formed an intricate network of modern and traditional beliefs. Rarely would an old belief be replaced by a new one as it could only happen if the whole society in that village wanted it so. *Buas* are a case in point. With the coming of the urban doctor, modern hospitals and other such medical care facilities, the village woman has started using these. While earlier her last resort was the *bua*, now it is not so, as he has been relegated to only one of the many "cure options' open to the mother. To illustrate diagrammatically:



Despite this increase in the number of options available, the *bua* still exists and plays a fairly vital role. His role cannot be skipped altogether, as it is a part of the traditional method of coping with diseases.

2.4 TYPES OF DIARRHOEAL DISEASE

Unlike in Maharashtra, there are very few names for diarrhoea in Gujarat. It is most commonly referred to as *jhada*. Dysentery, i.e., diarrhoea with the presence of blood and mucus, is usually referred to as *mardo*. In the Panchmahals district there is a name for green diarrhoea which is caused by eating green, leafy vegetables; it is called *vanadh no jhada*. Literally translated it means the diarrhoea of green, leafy vegetables.

As in Maharashtra, the colour and consistency of the stool was most often used to describe the disease. The frequency of evacuation along with the other two factors (colour and consistency) marked the onset of the disease.

While diarrhoea (which was usually understood to mean yellow, liquid stools) was not seen as an unusual occurrence or one to cause alarm; any deviation, especially if the stool was coloured red or white, was fairly worrying to the mother. Green diarrhoea, which seemed to be one of the most common kinds was rated on par with ordinary diarrhoea in terms of the seriousness of the disease.

2.4.1 Classification of Types

The easiest way in which a mother classified diarrhoea was on the basis of colour; the four colours being green, yellow, red, and white.

Green diarrhoea was perhaps the most common type and was attributed to reasons such as teething, eating green, leafy vegetables, eating cold things, cold weather, and coughs and colds.

Yellow diarrhoea was the most common colour and was thought to be caused largely by indigestion and specific kinds of food such as potatoes which were believed to produce a lot of gas.

Red diarrhoea was always attributed to the presence of blood. The causes of such diarrhoea were not clear. Some mothers said that bloody diarrhoea occurred after a prolonged episode of ordinary yellow diarrhoea and was occasionally accompanied by mucus and was hence sticky.

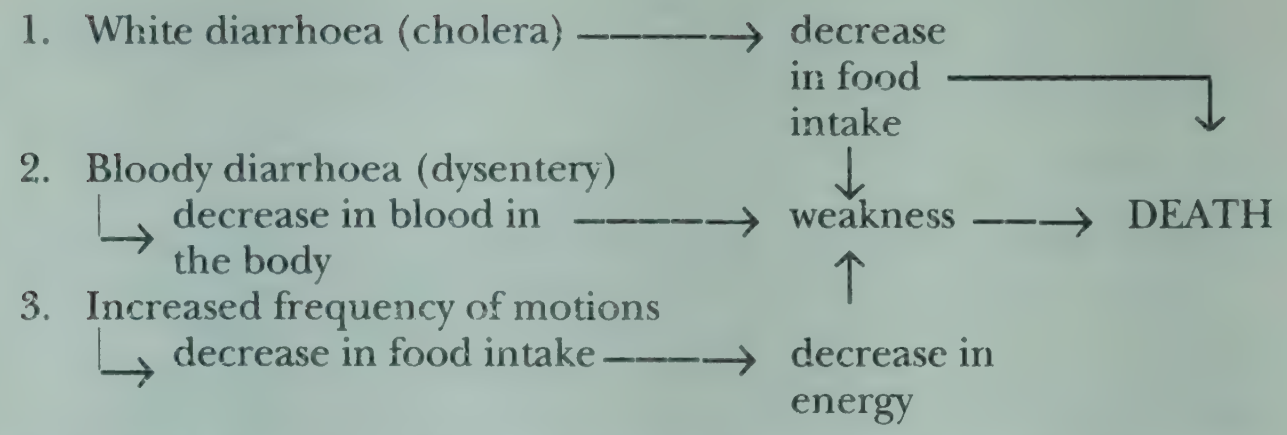
White diarrhoea was almost always believed to be cholera. It was described either as "pussy" or just as plain white in colour. Often it was described as foul smelling.

Diarrhoeal diseases can also be classified as serious and non-serious, i.e., as episodes which cause the mother to worry and those which did not. Serious diarrhoeal episodes were those which were seen to result in death, such as:

white diarrhoea (cholera);
bloody diarrhoea (dysentery); and
a large number of motions.

There was some degree of fatalism in the village mother as she felt that the child would die of the most harmless episodes if it was destined to do so. However, she knew that there were certain episodes, such as those mentioned above, in which the child was most likely to perish.

Routes to death were perceived to be as follows:



Cholera was perhaps the most feared type. According to mothers, it was characterized by white, foul smelling stool and was often accompanied by vomiting. The continual motions and loss of body water was seen to lead to the death of the child.

Dysentery was worrying primarily because of the presence of blood, which was indicative of some serious disorder in the stomach.

An increased frequency of motions was seen to make the child completely exhausted and also to drain the child of any food or liquid it may have had earlier. This in turn was perceived to make the child dry as stick and weak. These were understood to be indicators of the gravity of the disease and a signal to indicate that the child was about to die.

The mother understood such episodes partly because of her own experience and also from the experience of others and hearsay.

Non-serious diarrhoea or that which was believed to be harmless and disappeared of its own accord was seen to be green, or yellow.

Green diarrhoea, which was believed to be a result of fairly innocuous causes such as teething, indigestion, etc. was thought to be very natural in the growing up process of a child.

Yellow diarrhoea was seen in the same light as green diarrhoea and was seen as milder than green diarrhoea in terms of its consequences. However, there were exceptions, e.g., if the frequency increased or the attack continued for a long period.

Most diarrhoea was seen as non-serious, but was believed to deteriorate with the change coming about in a gradual, fairly imperceptible manner. Diarrhoea rarely began in a "serious" form. Hence, even non-serious diarrhoea was believed to cause death. While the relationship between non-serious and serious was perceived fairly accurately, the mother usually did not understand the reason for the deterioration. And, in her attempt to understand, attributed it to the will of God and destiny. This fatalistic, helpless feeling seemed to be a strong underlying chord beneath her apparent ability to cope.

Diarrhoea can also be classified by its duration, as follows:

i. *Temporary*: When diarrhoea lasts for a short period of time and goes away at the end of a few days or a week, it is seen as temporary.
ii. *Long-lasting*: Diarrhoea which lasts for fifteen days to a month or two is said to be long-lasting. This type is fairly common. Often the disease is thought to change in its severity over this duration, e.g., change from non-serious diarrhoea to diarrhoea with blood and pus.
iii. *Chronic*: That diarrhoea which recurs, even if it is after a duration of 4- 5 years, is termed chronic diarrhoea.

Of the three types, temporary and long-lasting diarrhoea seemed to be the two major types. Chronic diarrhoea was not easily recognized, except by a few, and was probably a superset of the first two kinds.

Most spoke of a degenerative kind of diarrhoea, which turned from yellow and watery to one with blood and pus. This degeneration could happen in a day or two or over a longer period of time, say ten to twelve days. Some mothers felt that a wait-and-watch policy was the best, as after the third or fourth day the diarrhoea would have settled into a type or would have disappeared altogether. Since treatment varied with the severity and type of the disease, after having classified the diarrhoeal episode into a category, the mother administered treatment accordingly.

2.4.2 Hypotheses regarding the different Classifications of Diarrhoea

Non-serious diarrhoea was believed to be mild enough to be completely cured at home, unlike serious diarrhoea, where a health practitioner's advice was sought. If a mother believed that all diarrhoea was of a fairly serious nature then she would not differentiate between the treatment that she meted out to the various diarrhoea types. Since she already understood that some of the non-serious types could degenerate, e.g., yellow diarrhoea, or cause a child to die even in its original form, e.g., green diarrhoea, this knowledge could be exploited and used as a point of entry for educating her about diarrhoeal diseases. What the factors were which differentiated non-serious from serious, were not clearly identified by her. If the concept of loss of water (dehydration) was to be explained to her as the major reason, it would be unlikely to cause incredulity or disbelief as she herself saw these indicators in the more serious cases. As long as her basic set of beliefs remained untouched she could easily absorb new concepts. It would then become one of the "learned" factors.

2.5 DESCRIPTIONS AND SYMPTOMS

A normal child, i.e., one not suffering from diarrhoea, usually defecated only once or twice a day. An increase in this number was usually indicative of diarrhoea, especially if it was accompanied by a change in the consistency from thick to liquid.

The most vivid descriptors of diarrhoea were colour, smell, and consistency.

As described earlier, diarrhoea could have colours such as red, white, green, and yellow and was usually foul smelling. The consistency of the stool was often mentioned as liquid or watery and occasionally as having some food particles in it (which looked like grain) or worms. It was also described as sticky or with mucus. The predominant type seemed to be the watery kind and mothers spoke of continuous, liquid diarrhoea. They believed that all the water drained out of the body and the child dried up. Sometimes if the motions were very watery, the mucus separated itself from the water to form lumps.

With the change in the stool, there was an attendant change in the child's behaviour which was the result of other symptoms which manifested themselves, depending upon the severity of the episode. The other symptoms accompanying diarrhoea were those such as:

a bloated stomach;
vomiting;

staring look;
sunken eyes;
burning sensation in the stomach;
dry lips;
stomach pain;
convulsions;
belching;
burning sensation while passing urine;
colic pain, especially with dysentery;
fever;
nausea;
"looseness" of the skin.

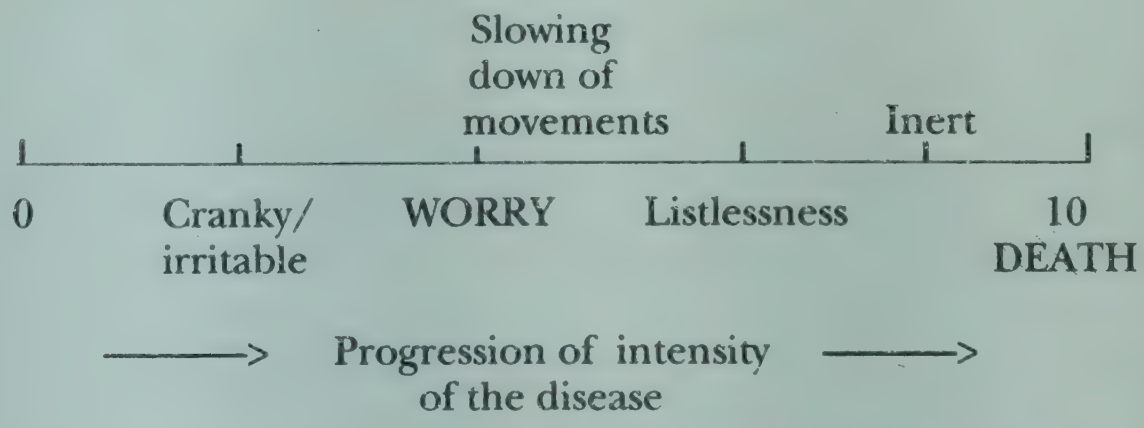
Some mothers in, an attempt to describe the feeling of discomfort of the child, said that the child looked as if it had a headache and suffered from the same feeling of uneasiness and tiredness as it did when it had diarrhoea.

These symptoms occurred either singly or jointly. The worst type of diarrhoea was that which was accompanied by vomiting and pain or a multitude of such symptoms.

"Looseness" was one of the most commonly mentioned symptoms of diarrhoea. This was believed to be a state in which the child's skin became flaccid and the child became very weak.

Behaviourally too, there were changes in the child. The discomfort and unease the child suffered translated itself into crankiness and irritability. The child was said to become very thin and weak and lay down continually. The inactivity and listlessness of the child would begin to worry the mother as she perceived these to be the first signs of "seriousness" and the need for medical intervention. The child also was thought to show signs of thirst and to continually ask for water. Simultaneously, the child's appetite was also thought to decrease. The child's emaciated, exhausted appearance indicated to the mother a loss of energy and the fact that the child was on the verge of death.

The child's behaviour could be mapped as follows:



This illustrates that the child's movements slowed down as the disease was perceived to worsen. When movements had almost stopped the child was close to death. The mother started worrying from the time the child became non-responsive and from this time on sought medical aid.

Despite knowing that the child was dying, the mother did not believe that it was in her hands to stop it. Since she did not know the actual cause of death she did not know how best to treat it.

2.6 CONSEQUENCES

As in Maharashtra, mothers in Gujarat perceived that the disease had three major consequences:

i. Weakness;
ii. Dryness;
iii. Death.

i. Weakness : This was seen as a major consequence of diarrhoea, and its signs were more easily recognizable.

Symptoms of weakness were described as follows:

the child had no strength to get up;
the child could not walk properly (staggered);
the child became very quiet and slept in one place and after a few days became very thin;
the child stayed in one place and didn't ask for food or milk;
the child closed its eyes and lay down and didn't cry all the time;
the child looked dead and one knew it was dying;
the child felt giddy and could not walk, as there was less energy in the body; and
the child became terribly thin as it had no food for a long time.

Weakness was attributed to a lack of food and a continual evacuation of fluids and food. It was thought to be especially marked in episodes where the child was continually vomiting and defecating or in case of dysentery and cholera, i.e., in the more serious episodes. However, weakness was sometimes seen as the end result of an episode and was not translated into death.

ii. Dryness: The incessant evacuation of water through the stool, urine and occasionally vomit, led the mother to understand that the child's system was losing water. This was understood to result in a dry, crumpled skin and to make the child intensely thirsty. Some also attributed the dryness to heat within the body which they believed was generated during diarrhoea.

Dryness or dehydration, was manifested in two or three different ways. Apart from giving the skin a crumpled look, the mouth was seen to become dry and the lips chapped and parched. The hands and legs were also thought to shrivel up or look as if they were being pulled inwards. A pinched face and a change in the consistency of the skin, were also mentioned by some.

Dryness was also spoken of as looseness, and often the child was spoken of as loose and still, both signs of impending death.

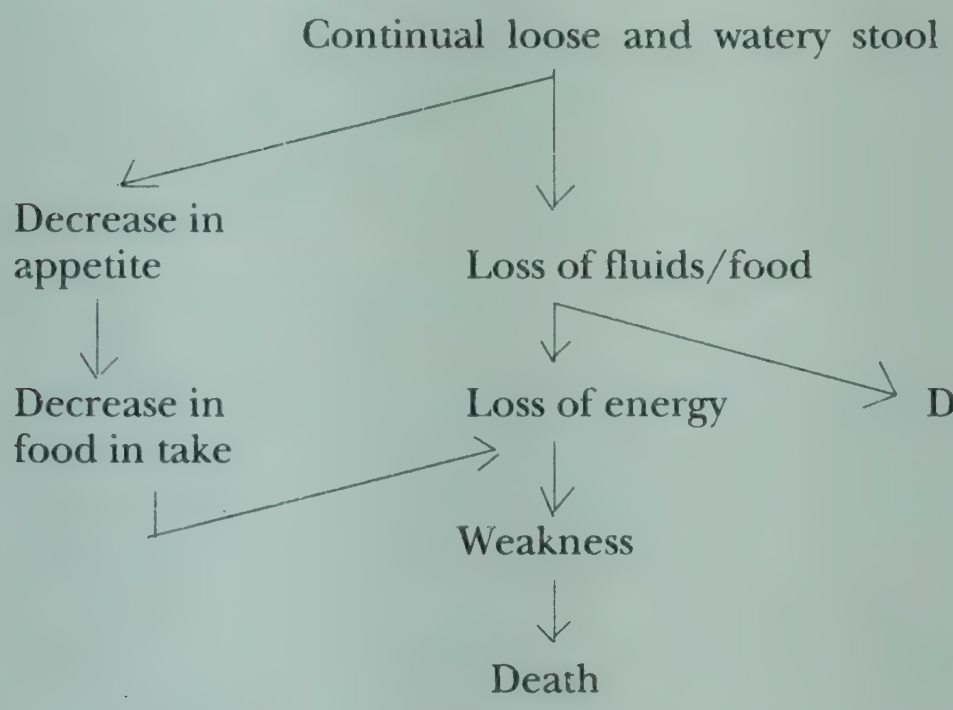
iii. Death : Death, the final consequence, was believed to occur mainly in episodes of serious diarrhoea, but was also believed to occur in the case of harmless, non-serious diarrhoea. Mothers were not very sure about what factors caused death. However, they did recognize the onset of death and the stage at which outside help was crucial.

While a mother's attitude to death was largely fatalistic, she did feel that there were some "internal" factors which caused the child to die. External factors, such as the will of God, or destiny were completely beyond her control and hence she felt that though she would try to save the child with a variety of medicines, incantations and offerings to appease God or the evil spirit, if the child had to die it would.

"Internal" factors, or those over which she had some control, were those like dehydration or weakness. However, in reality, there were difficulties which prevented her from exercising her control over these factors. In her view, death was caused by many factors such as:

a. lack of food;
b. lack of fluid;
c. lack of hygiene;
d. improper care;
e. exhaustion from continual evacuation of food and fluid from the system;
f. pain; and
g. blood draining out of the body.

The routes to death were seen to be as follows:

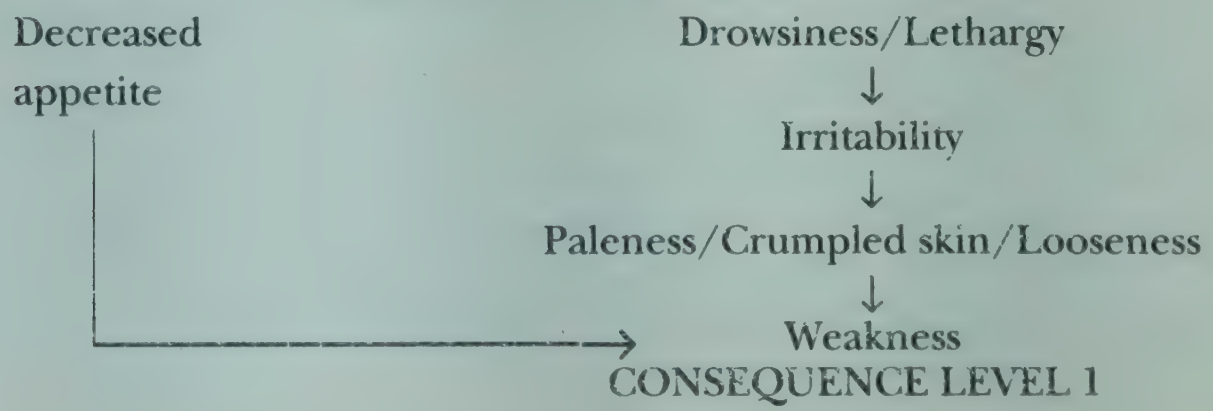


While the mother understood that without food and water the child would succumb to the disease, she could not seem to feed the child much because its appetite was also said to have decreased. This decrease in the intake of food increased the loss of energy and set up a downward spiral to death.

In some cholera and dysentery cases, the child was believed to die in pain or because all the blood had drained out of the system.

In sum, the consequences were seen to be of two kinds. One, where death was the end result and the other, where weakness was the end result. The latter seemed to be the more dominant kind, though most mothers were aware of the former.

The consequence routes seem to be as follows:



Dryness
↓
Thinness
↓
Inertia
↓
Death

CONSEQUENCE LEVEL 2

While the indicators are fairly well marked, both behaviourally and in terms of the child's physical condition, the factors which would motivate her to seek help were usually those evidenced between the two consequence levels, i.e., thinness, dryness, and inertia. The other factors which would also spur her to action, but perhaps not in the same degree, were symptomatic, such as pain in the stomach, frequent evacuation of stool, the colour of the stool, etc.

Perceptions of the first consequence seemed to be more experience-based than the second, which seemed to be based upon hearsay — either from those whose children had died or from other credible sources, such as doctors.

2.7 FEEDING PRACTICE

Different kinds of food were attributed with different properties —such as gas-causing, cold-causing, heat- causing, etc. While a normal child could have an unrestricted diet, a child suffering from diarrhoea had to have a diet which had been substantially modified to suit the weak condition of the stomach.

2.7.1 Staple/Normal Diet

Normal food comprised cereals and vegetables. The commonest cereal was *bajra* (pearl millet). *Chappatis* were made from millet, barley, corn, and wheat. Vegetables eaten were those like potatoes, tomatoes, brinjal, and cauliflower. Pulses, milk, buttermilk, yoghurt and rice also formed part of the normal diet. Other items fed to the child which did not strictly belong to the routine, everyday diet were those like biscuits, puffed rice, tea, rolls, papad accompaniment, jaggery, *ghee*, and *khichdi* of rice and pulses.

2.7.2 Feeding during Diarrhoea

Older children : During diarrhoea the diet would be modified substantially. Certain foods which were believed to cause gas or generate some temperature (either heat or cold) within the body or burden on the digestive system, were excluded from the diet. Food which were both a part of the normal diet and the diarrhoeal diet were considerably liquified and softened in a diarrhoeal attack. The most important difference between the two diets seemed to be the predominance of rice in the latter. This was so for the following reasons:

wheat or millet *chappatis* were believed to be "heavy", i.e., difficult for the system to digest;
wheat was thought to exacerbate the diarrhoea;
millet *roti* was thought to generate more heat inside the system; and
rice seemed to be a softer, and more easily digestible cereal, hence lighter than the others.

Gas-causing food were also banned during diarrhoeal episodes, as it was a further burden on a weakened digestive system. These were believed to be potatoes mainly, but some mentions were made of foods such as cereals and onions.

Cold-causing food, such as yoghurt and buttermilk were also excluded from the diarrhoeal diet by some. Similarly, heat generating food such as tea, *bajra*, corn, and spicy food were excluded. However, on the whole, cold-causing foods were not excluded but in fact were thought to be the proper ingredients to comprise the bulk of the diarrhoeal diet.

While most mothers fed their children through an episode, and claimed to do so for the extra energy the food gave, some mothers did not.

There was a feeling among some in virtually every village, that food should not be given during an episode of diarrhoea as:

a. it would come out undigested; and
b. it would strain the digestive system.

While some said that they would not feed the child even if it asked for food unless the doctor said so, others said that they felt they had to feed the child and would keep it on milk at least. Still others said that they would feed the child only if it asked for food.

Most said that since the appetite of the child had decreased and the thirst of the child had increased, a smaller quantity of food should be fed and more fluid given.

In some cases mothers denied their child food for 10-12 days (the entire duration of the episode) as they felt that there was no point in feeding the child as, it all came out almost exactly as it went in. Other reasons as to why mothers believed a child should not be fed during diarrhoea were:

the child experienced a burning sensation in the stomach;
the motions increased with food;
the child might vomit if given any food; and
the child experienced a burning sensation in the urine.

All the claims that mothers made about the special, modified diet that should be given during diarrhoea were probably very theoretical. In all likelihood they fed only liquids and starved the child of solids, especially if the child did not show an interest in the food. Since mothers said that a major symptom of diarrhoea was a decrease in appetite and that in severe cases the child stopped eating altogether it was more likely that:

i. the diarrhoeal diet, if given at all, was restricted to only the mild, non-serious episodes wherein the child's appetite did not decrease much; and
ii. the child was fed only as much as it would accept, which was less and less as the episode progressed.

However, a large variety of liquids were fed. The commonest was ordinary water which was fed to the child whenever it was thirsty. Milk and lemon water were the other two relatively more common liquids which were given virtually all through the episode. Apart from giving water to quench the child's thirst, water was also given to replenish the water that the body was seen to lose. Some mothers in the Kutch district (in the village which had a resident doctor) said that they were advised to do this by doctors and their elders. Their reasons for giving the child liquids to drink were:

to wet the lips/throat; and
to ease the process of digestion. As the child was perceived to be unable to digest solid food, liquids were given.

Other liquids given were those such as tea, coffee, *dal pani*, buttermilk, glucose water, SSS, opium water, and mint water. Some of the home remedies which were given also had a liquid base, i.e., these were composed of water and various herbs. Coffee was perceived to be able to bind the stools, *dal pani* to give energy, and opium water to put the child to sleep and also cure diarrhoea. Similarly, glucose water and SSS were believed to cure diarrhoea, and act as anti-emetics.

Neonates: Breastfeeding was continued all through an episode, though with some modifications to the normal pattern. Either the mother changed her own diet to the softer, more bland diarrhoeal diet (discussed above), or she decreased the frequency and quantity of breast milk and supplemented it with other liquids like coffee, glucose water or the sugar salt solution. Sometime she substituted it with "top" (goat or buffalo) milk.

Mothers continued to feed the child breast milk primarily because they believed that a neonate would not survive without it. Breast milk was also believed to keep the child healthy and to stop him from drying up. Mothers in the Panchmahals and Amreli districts said that doctors and elders sometimes told them to stop breastfeeding either for a day or completely through the episode. However, they recommended some substitute to supplement it, such as ordinary water or glucose water.

2.7.3 Post-diarrhoeal feeding

After an episode of diarrhoea was over, mothers claimed to continue the diarrhoeal diet for a few days afterwards. The child was slowly taken off the soft diet and the "normal" diet was introduced gradually. A light diet was followed for a few days as they felt it would not strain the digestion of the child, helping avoid a recurrence of the disease.

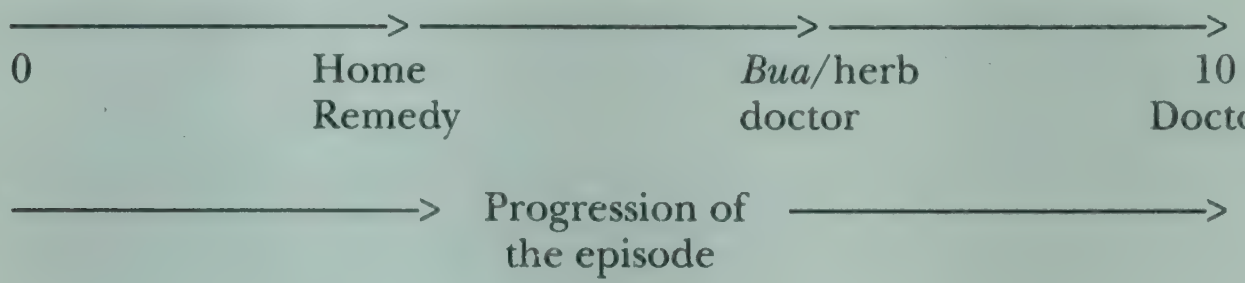
The progression of the diet was as follows:

Days after diarrhoeal episode	Food
0 - 3	*khichdi*, rice and yoghurt/ buttermilk, soft pulses, etc.;
4 - 8	introduction of wheat, millet and corn-based food;
10 - 12	introduction of spicy food and all vegetables.

There were some mothers who said that they did not alter the diet during diarrhoea and continued to feed the child the same food that they were feeding earlier. This was probably realistic claim, and was likely to be true of most mothers.

2.8 TREATMENT

Since a mother did not usually differentiate between serious and non-serious diarrhoea in its initial stages, the initial action she took was the same for both types. The sequence of activities she followed is given below:



For a few days after the episode had begun she would look after the child at home by administering various mixtures and potions which she had been told about by her elders. Simultaneously she would feed the child with remedial food. Such food were not part of the routine diet but were given as a cure, e.g., pomegranate mixed with sugar and water and boiled. Sometimes mixtures made up of commonplace items were given, such as roasted and ground mustard and cumin seed, mixed in water.

A list of such remedial food is give in Appendix E.

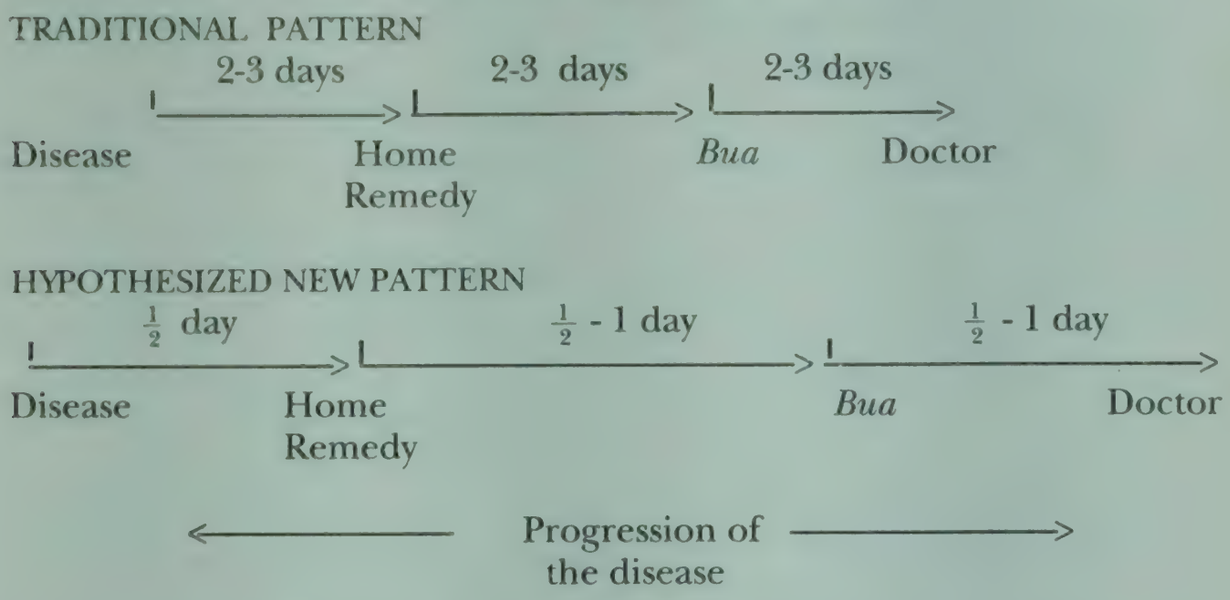
If the child did not show signs of improvement, then the mother's next resort would be to the *bua* or the witch doctor. He would prescribe herbs and make sacrifices of goats and cockerels to propitiate the wrath of the deity who was believed to have given the child the disease. A sacrifice was usually made in cases of prolonged or chronic diarrhoea. The goat or the cockerel would be taken thrice round the child's head, and its throat cut before being sacrificed.

If the child still was not cured and was showing signs of worsening, the mother would go to a hospital. This kind of medical intervention was probably the last resort for two reasons:

i. the parameters of her behaviour had been laid down for her and she could not alter this without flaunting tradition and seeming "forward";
ii. she had to move out of the boundaries of her home and village to seek such aid, and hence would be extremely inconvenienced. She probably felt that this inconvenience should be borne only if the situation was grave enough to merit it.

While this basic pattern remained constant, there seemed to be a certain condensation of the time frame across which these remedies were followed. Some mothers claimed to resort to a doctor fairly soon after the episode began, while others stated that they went to a doctor fairly late in the episode. One mother said that when her child last had diarrhoea she had taken it to the doctor only when it was looking like a 'dry stick'. Especially in villages which have resident doctors, or a doctor who is easily accessible, the reduction

in time taken to reach a doctor seems evident. The difference between the two behavioural patterns is presented diagramatically below:



While the primary attempt of the mother was to stop the diarrhoea, as she understood cure to be a cessation of the motion, she would also attempt to tackle dehydration which she recognized. She would attempt to combat dehydration with cooling fluids such as:

buttermilk;
SSS;
ordinary water;
coconut water;
"moong" water (water of pulses); and
sweetlime juice.

However, she would not do this very consciously, but rather because she was told to do so by her elders, doctors etc. Perhaps the only liquid she fed the child regularly was water. All others seemed to be given irregularly and perhaps as substitutes to one another.

2.8.1 Traditional (including Home) Remedies

Traditional cures comprised certain food, herbs and "faith-healing" of some kind, i.e., where vows would be taken at temples and *buas* or witch doctors would be called to exorcize evil spirits. Sometimes elders performed this "exorcism" with red chillies and salt.

Vows were taken by some on specific days like Tuesdays and Sundays. In Hindu religion, worship of different gods is done on different days as it is believed that every God has a specific day for worship.

Some of the commonest cures, such as those which almost all mothers across the state claimed to use were *mardasingh* (a herb), opium (locally called *tala* or *afeem*), deopiated poppy seeds *(khas-khas)* and nutmeg *(jaiphal)*. All these were used to stop the diarrhoea. *Mardasingh*, was also thought to be good for dysentery. These were used either on their own or with additions. These and the other herbs used are listed below.

Remedy	Perceived action
Paste of *kangsiro**, applied on the mothers nipples (if she was breastfeeding the child)	Not specified
*Javantri** mixed with milk and sugar	To stop diarrhoea
Mustard and cumin seed mixed with milk	Not specified
Aniseed in water	Not specified
Turmeric in milk	Not specified
Nutmeg, sugar and clarified butter	To stop diarrhoea
*Isabgol** roots	Not specified
Lemon, black pepper and salt mixed in water	To stop diarrhoea
Paste of neem (margosa) leaves	To stop diarrhoea
Clarified butter and water	Not specified
Mint water	Not specified
Mustard and cumin seed mixed with sugar and water	Not specified
Pomegranate mixed with sugar and boiled till it becomes a thick liquid	To stop diarrhoea
Thick liquid of *morari** and water	To stop diarrhoea
Bark of the tamarind tree	To decrease the outflow of blood and stop motions in the case of dysentery.
Roots of neem and tamarind	To stop diarrhoea

2.8.2 Medical Treatment

Medical treatment was believed to comprise the following:

syrups;
tablets;
powders/packets;
liquids like glucose water either fed orally or intravenously through a drip (injections).

Hospitals and doctors were resorted to only when a mother felt helpless and that she had lost control over the child. Indicators that the child needed such medical help were:

a thin, shrivelled appearance;
the presence of white diarrhoea; and
a completely listless child.

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* Indigenous names

Most mothers were familiar with glucose water as it probably was the commonest treatment administered. All other medicines that they had previously given to the child were not known by name. Their husbands or mothers-in-law bought the medicines and knew far more than the mother about the names of drugs, and even the name of the doctor. However, mothers remembered the dosages they gave e.g., one spoon at a time through the day, half a tablet morning and evening for two days, etc.

Mothers also claimed to stop all other household remedies when administering the medicines prescribed by the doctor. Some said they were given a lot of packets with different coloured threads tied on them to enable them to distinguish between the packets. This implied that colour was probably one of the most recognizable signs of a particular medicine. Hence, the use of a bright colour for ORS packets could be considered.

Though their faith in doctors by and large was fairly strong, only those who had "local" doctors were loyal to a particular doctor. If the medicine given initially did not succeed in curing the diarrhoea then they claimed to resort to a different medicine and a different doctor. In one particular village in the Kutch district, the women spoke of a lady doctor whom they respected, as they believed she could cure their children. She was almost revered, because they felt she was accessible to them at virtually any time of the day or night.

While some mothers said that their doctor advised them to keep feeding the child with fluids as the child was drying up, responses from the rest seemed to indicate that doctors only gave them advice as to what medicine and food to take, without educating them about the disease.

2.9 ORAL REHYDRATION THERAPY (ORT)

While mothers gave their children a fairly large variety of liquids, they did not give them as rehydrants but rather as food substitutes. Since mothers believed that children could not digest most solids during an episode of diarrhoea, they fed them liquids. Hence, these liquids were called upon to provide the body with the nourishment solids were seen to provide.

While mothers were able to recognize symptoms of dehydration, most did not understand that the body water which was being lost needed to be replaced, bar a few in the Panchmahals district.

Despite this, the awareness and the use of SSS and ORS was fairly high indicating that disseminators of this knowledge (Anganwadis and doctors) were doing a fairly efficient job.

2.9.1 Sugar Salt Solution (SSS)

The sugar salt solution seems to have entrenched itself firmly in this state. Virtually all mothers were aware of the SSS and claimed to have used it at some time previously. Only in one Harijan group, in the Amreli district, was there no mention of SSS.

Information seems to have been disseminated in a very patchy fashion. There were some in every village who did not know about SSS at all.

Knowledge of SSS had been disseminated to mothers through sources like doctors, Anganwadis, mothers-in-law and other elders in the village. Some claimed to have heard of it from their friends or peer groups, indicating that the news was being passed round by word of mouth. In time probably the

entire village would be aware of it. This indicated that the SSS had begun to become a part of a mother's repertoire of home remedies.

Though this kind of publicity is probably the best for quick adoption of the mixture, a drawback could be the lack of accuracy in the proportions specified. In fact, very many of the proportions mentioned were inaccurate, some to a very large extent. A list of such proportions is given.

While most accepted the nature of the composition of the mixture, some in the Panchmahals district said that:

a. salt could exacerbate the diarrhoea and hence should not be given; and
b. extra sugar could lead to the child getting worms.

Usually, SSS was made up with lime (a few drops). This resulted in the mixture being viewed as sherbet or a cooling summer drink by quite a few.

SSS was believed to be beneficial to a child suffering from diarrhoea, as it was perceived to have two very important functions:

a. stopping diarrhoea/binding loose stools; and
b. keeping the child's body/system cool.

In addition, it was thought to do the following:

wetting the throat/lips;
stopping the burning in the stomach ;
giving energy; and
replacing lost water.

The solution was usually administered a little at a time and as much as the child could drink (which is usually not too much). Some even mentioned that the solution should not be used for more than a day and that the balance should be thrown away. This indicated that almost the entire administration was being carried out fairly meticulously. Hence, the major task for communication would be to educate mothers about the rehydration properties of the solution and also the importance of the accuracy of the preparation.

2.9.2 Oral Rehydration Salts (ORS)

As with SSS, awareness of ORS seemed patchy, with only some being aware of it. In the larger villages in the Kutch and Panchmahals district, mothers claimed to have seen the white IDPL packets. While mothers in the Panchmahals district were familiar with Electral packets, those in the other districts seemed more familiar with Peditral.

The contents of the packet were not known by most. Some who claimed to know, said it was made of glucose, sugar and salt. Some also saw it as a substitute for SSS, as they felt it had a similar action.

The powder was usually mixed with water before being fed to the child. Sometimes it was mixed with milk.

It was believed to work in much the same way as SSS. Its primary role was to stop diarrhoea, but it was also seen to be useful in the following ways:

it stopped the water content in the body from decreasing;
it stopped the heat from building up and cooled the body;
it gave energy; and
it stopped the mouth from getting dry.

Some said they had got their packets free from the hospitals. Others said that they had bought it from the market for Rs.11.

There seemed to be a certain amount of confusion between glucose and the salts in the ORS packet. "Glucose" seemed to have become a generic name and mothers did not seem to be able to distinguish between glucose and ORS.

The use of glucose was evidently fairly widespread and seemed to be more than that of ORS, since some who had never seen the ORS packets were aware of glucose. In almost every village respondents spoke of having used glucose powder.

Their understanding of the term glucose and their use of it needs to be verified at the quantitative stage.

If this confusion between ORS and glucose ought to be be sorted out, then the ORS packet would have to be made very different from the glucose packet and also provided with an easy-to-remember name so that it didn't become another "glucose".

Vis-a-vis SSS, which was seen largely as a cooling sherbet, ORS had a slightly more medicinal aura. To some extent this was counterbalanced by perceptions of the taste which was believed to be like sweetlime. On the whole it was viewed as fairly similar to SSS, the major difference being that it was packaged.

3. HEALTH PRACTITIONERS

3.1 RESPONDENT PROFILE

In the three districts in Gujarat, the sample of health practitioners was distributed as follows:

	No. of interviews
PHC workers	8
MBBS doctors	4
Anganwadi workers	4
Non-MBBS doctors	4
	20

MBBS doctors were found largely in the base towns of Godhra and Bhuj. Only one was found in a village. He was stationed at Meghpar, in the Kutch district, but had a practice in the city and other villages.

Some health practitioners practised more than one discipline, i.e., both allopathic and ayurvedic medicines without formal training in either or with some training in only one. One such practitioner in a PHC, was mainly ayurvedic, but seemed equally conversant with allopathic medicine.

All health practitioners seemed to be remarkably aware of diarrhoea in terms of its symptoms, consequences, and treatment. Most claimed to have been told about it in college or in their training programmes. Interestingly, most health practitioners (especially those who were not MBBSs) were very young in this field and had experience of 3 months to 3 years.

There was a fair degree of agreement between what health practitioners recommended and what mothers claimed they did, especially regarding feeding practices.

In the Kutch district, one PHC worker spoke of an epidemic of cholera which had taken place in 1980-81. In their attempts to control the epidemic, the government had supplied a large number of ORS packets and a lot of literature on the sugar salt solution. Though it has been five years since the epidemic, the knowledge disseminated then was still put into practice.

Panchmahals district seemed to be slightly unusual in that some of their ICDS officials seemed to have been trained by officials from CARE, United States. The ICDS person interviewed said that posters had been shown to them in which a child suffering from diarrhoea had been compared with a plant starved of water, emphasizing the point that the child could die if not adequately rehydrated.

On the whole, health practitioners in Gujarat seemed to be well-equipped, both in terms of knowledge and product supplies, to cope with diarrhoea.

3.2 CAUSES OF DIARRHOEA

A large number of the reasons mentioned were similar to those mentioned by mothers, such as:

indigestion;
hot breast milk;
teething;
the weather (summer/winter/monsoon);
stale food; and
polluted water.

Apart from these, most health practitioners felt that diarrhoea was caused by germs or bacteria, basically due to two reasons:

i. a lack of personal and environmental hygiene; and
ii. the mothers' own attitude, which they believed was one of indifference

Measures that they felt mothers should adopt, in terms of hygiene, were those like:

using clean vessels for cooking;
bathing the child regularly;
making the child wear clean clothes;
boiling feeding bottles; and
keeping food covered/preventing flies from sitting on food.

Some MBBSs spoke of bacilli, amoebas and salmonella virus as being causative agents.

While most practitioners spoke of hygiene, Anganwadi workers notably did not. Their perceptions of the causes of diarrhoea, coincided more with what mothers believed than what other practitioners believed.

This was also true of perceptions regarding the attitude of the mother. While most practitioners believed that the mother didn't care for her child and neglected it even when it was ill, Anganwadi workars did not seem to feel so. At most, they said that the mother could not manage to look after the child as she worked through the day, displaying a somewhat more sympathetic attitude to the mother.

Some MBBS doctors said that the disease was contagious and that a child could get it if it went near a person suffering from diarrhoea.

Other reasons that were cited were:

as an accompaniment to diseases such as chicken-pox, pneumonia, etc.;
the presence of worms in the stomach;
walking barefoot in the heat during summer;
faulty eating habits of the mother. This they believed contaminated the breast milk, which made the breastfed infant get diarrhoea.

3.2.1 Classification of Causes

As in Maharashtra, the causes can be classified into modern and traditional

in Gujarat. Modern factors being those such as lack of personal hygiene, polluted water, lack of environmental hygiene, etc, and the balance would comprise traditional factors. These are classified by practitioner type, below:

	Modern	**Traditional**
MBBS	Polluted water, lack of personal hygiene, polluted environment, uncovered food	None
Frontline workers	Uncovered food, polluted water, lack of cleanliness	Teething, change in weather, indigestion bad food habits, contaminated breast milk
Anganwadi workers	Infected water, unclean environment	Heat in summer, teething, indigestion, contaminated breast milk, bad food habits
Others	Uncovered food, lack of personal hygiene	Change in the season, bad food habits, indigestion, teething

It seems from this classification that health practitioners' belief about the causes of diarrhoea varied with their level of education. While the MBBSs believed only in "modern" causes, other practitioners believed in both. Anganwadi workers seemed to have a large number of traditional beliefs, upon which modern notions had been superimposed. However, they seemed to believe more firmly in "traditional" causes. Hence they did not disseminate information on what caused diarrhoea, unlike other practitioners who at least claimed to educate their patients.

3.3 ATTITUDES TO PREVENTION AND CURE

Most practitioners believed that hygiene and a lack of caring on the mother's part were the major causative agents. Hence they believed that diarrhoea could be prevented.

Preventive measure mainly deal with improving environmental and personal hygiene. Measures that were postulated are those such as:

keeping the child clean;
keeping food covered;
boiling drinking water;
keeping the utensils clean;
keeping the child's nails clean;
burying the diarrhoea and vomit in sand and boiling the child's clothes (to prevent the disease from spreading).

Also, they believed that a mother should be more attentive to her child. Apart from following the measures listed earlier, they believed that she needed to observe her child well. Some said that she did not notice the

diarrhoea in the initial stages at all. Others felt that even if she did she took no immediate action and sometimes was thought to be too lazy to even follow any simple household remedies till the diarrhoea was two or three days old.

All practitioners believed diarrhoea was curable. Cure was believed by some to require a multi-prolonged approach:

liquids to rehydrate the child;
anti-diarrhoeals to stop the diarrhoea; and
antibiotics (in some cases) to fight the infection.

While most practitioners knew about rehydration fluids and anti-diarrhoeals, only a few (MBBSs) knew of antibiotics and the I.V. drip.

The major factor obstructing quick and effective cure, was believed to be the lead time. Children are usually brought 3 or 4 days after the beginning of the episode, sometimes after dehydration had already set in. Some practitioners believed that a change in the lead time had come about, and that sometimes cases were brought fairly soon after the beginning of the episode. However, they felt this was true of only the well-to-do families. Education and income were postulated to be the two factors which had a direct bearing on lead time, i.e., the higher the education and the household income the shorter the lead time.

Over and above this, accessibility to a health practitioner was believed to be another determinant of lead time.

In sum, practitioners believed that there were three factors which together determined when the child would be brought to them:

i. the level of awareness and education of the parents;
ii. the socio-economic status of the household; and
iii. the accessibility to health facilities.

The higher each of these factors was, the more probable it was that the child would be brought for treatment in time.

Practitioners felt that mothers not only practised home remedies but also believed in taking vows. They saw the village mother as an uncaring and superstitious woman, who came to a "doctor" only as a last resort. This was partly consonant with the treatment pattern shown by mothers.

In some cases expectations from the practitioner were fairly high and sometimes he could not deliver. This led them to lose faith in the practitioner and fall back upon their traditional cures, thus reinforcing their faith in such.

Some frontline and Anganwadi workers in treating the patient, said that they did not dissuade the parents from taking vows, but rather tried to make them aware of the need for, and the effect of, modern medicine.

3.4 TYPES OF DIARRHOEAL DISEASE

There seemed to be three broad types of diarrhoeal disease:

i. cholera;
ii. dysentery; and
iii. ordinary/plain diarrhoea.

As in the case of mothers, the terminology for these were very limited. Unlike mothers, practitioners seemed to have more definite ideas about

diarrhoeal disease. Hence their classification was done somewhat differently. This is discussed later.

3.4.1 Classification of Types

All three types of diarrhoeal disease were believed to be dangerous if left unchecked. However, some felt that dysentery and cholera were far more serious than ordinary diarrhoea.

3.4.1.1 *Serious diarrhoeal disease*

Cholera was usually thought to be foul smelling, excessively liquid, watery stool. Some described it as effortless motions, as diarrhoea was believed to be completely liquid, like rice *kanji*. Usually accompanied by vomiting, it was thought to be due to polluted/infected water. Some believed that it was contagious. It was thought to be serious and worry causing because it was perceived as the one type in which a very large quantity of water was depleted from the body. Hence, dehydration was thought to set in very quickly. Anganwadi and frontline workers seemed to be fairly helpless in a situation like this and they usually advised the patient to go to a doctor.

Dysentery was believed to be harmful as the child passed blood and pus in the stool and experienced a great deal of pain. MBBSs attributed this to various bacteria and viruses. They spoke of two types of dysentery — amoebic dysentery and bacillary dysentery. However, they could not distinguish between the two types, since they had no facilities (laboratories, microscopes, etc.) with which to detect the organisms. One MBBS doctor said that in some cases of bacillary dysentery there were no loose motions, i.e., the stools were well formed. The main worrying element in this type seemed to be the blood in the stool and to some extent, the accompanying pain, and not so much a loss of water as in cholera.

Some also said that serious diarrhoea was that in which more than 7-8 motions were passed in a day. Frequent and loose motions meant that the child's body would be drained of fluid very quickly and hence it was thought as serious.

The common element in all these three "serious" types was the fear that they would lead to death.

3.4.1.2 *Non-serious diarrhoea*

This was believed to be of a fairly harmless variety as it was the kind in which only a little water was lost, and which got cured fairly easily, i.e., in a short period of time. It is the kind in which the child had three or four motions, or less, in a day and which usually occurred when the child was teething. It was thought to be either yellow or green in colour, and had a semi-solid consistency i.e., was not completely liquid. Motions which were either green in colour or fairly well-formed were not believed to be worry-causing as:

i. they were not a result of any infection, and
ii. dehydration did not usually occur.

While dysentery and cholera were believed to be caused by germs and viruses, ordinary diarrhoea and frequent motions were believed to have different causes. Diarrhoea due to indigestion, "hot" breast milk, etc., could

degenerate into serious diarrhoea if adequate care was not taken. When the frequency of motions increased, regardless of the cause, the diarrhoea shifted into the category of "serious", i.e., there was a shift, over the diarrhoeal episode from non-serious to serious.

Mothers classifed diarrhoea similarly, though fairly unaware of the dehydration-to-death link. They too believed that non-serious green diarrhoea could degenerate into serious diarrhoea. However, unlike practitioners they did not link it to the frequency of motions or water loss, but rather to the will of God and destiny.

3.4.2 Hypotheses Regarding the Classification of the Different Diarrhoea Types

The major classification seemed to be by the seriousness of the disease. Serious diarrhoea was seen either as watery and continuous stool, or dysentery, or cholera. This implied that the other episodes (which probably formed the bulk of diarrhoea episodes) were not treated as serious. However, the treatment for both types of episodes was quite comprehensive.

Though levels of the knowledge of causes varied by practitioner type, virtually all practitioners classifed diarrhoea in a similar fashion.

This would imply that their understanding of the disease was also similar and hence in any communication effort they could be regarded as a homogeneous body.

3.5 DESCRIPTION AND SYMPTOMS

Diarrhoea was described quite graphically in terms of the colour, the smell, and the consistency. Usually it was described as semi-solid or watery (in cholera it was believed to be completely liquid) and foul smelling. The colour of the stool was often an indication of the severity of the disease — red to indicate dysentery with blood, white to indicate the presence of cholera, yellow or green to indicate that the diarrhoea was caused by indigestion, teething, etc., i.e., it was ordinary diarrhoea.

Apart from loose stool, diarrhoea was understood to have the following symptoms:

colic (stomach) pain;
decreased appetite;
bloated stomach; and
decrease in body weight resulting in the arms and legs looking shrunken.

Since diarrhoea was believed to result in dehydration, practitioners recognized its symptoms as distinct from those of diarrhoea, and described them thus:

dry lips, mouth;
shrivelled, "loose" skin;
sunken eyes;
sunken skull (fontanelle)
decreased pulse rate and respiration;
pale, pinched face;
increased thirst;

decreased urine output;
cold limbs ; and
dull eyes.

Additionally, the child was described as having aberrant behaviour. While some said that it was very cranky and irritable and extremely uncomfortable because of the pain, others said that the child was completely listless, inactive, drowsy, and weak. Some said that the child has convulsions because of excessive vomiting.

According to mothers, inactivity was a more worrying sign as it indicated that the child was almost on its death bed. There did not seem to be any such feeling among practitioners. Active and listless children were thought to be equally unwell, in that they were both treated with the same degree of attention and medication (other symptoms being the same).

The symptoms which were major indicators of the child's condition were:

i. the frequency and consistency of the stools; and
ii. the symptoms of dehydration.

Unlike practitioners, mothers observed both these factors but did not give them as much importance as the child's behaviour. The following table illustrates the differences in the rating of the worry-causing symptoms among practitioners and mothers.

	Practitioners	**Mothers**
Dehydration symptoms (dryness, etc.)	1	3
Frequency and consistency of the stool	2	2
Behaviour of the child (stillness, listlessness, etc.)	3	1

3.6 CONSEQUENCES

All practitioners were aware of the following chain of consequences:

0. onset of diarrhoea
↓
1. weakness
↓
2. dehydration
↓
3. death

Only one frontline worker in Amreli did not know that diarrhoea could result in dehydration and death. This was probably because she recommended most cases to a doctor and did not follow them through. Every other practitioner claimed to be aware of this link.

3.6.1 Weakness

Weakness was believed to be a result of a lack of sufficient food. Here, practitioners seemed to postulate the existence of some kind of vicious circle. The child's appetite decreased with diarrhoea, hence he was given less food

by the mother and this in turn made the child weak. As the episode progressed the child got weaker and got less food to eat. This weakness was seen to lead to the inactivity of the child. Most practitioners saw weakness as an attendant symptom of diarrhoea and also believed that because it was due to a lack of food, it could be remedied to some extent.

Weakness was also perceived to manifest itself in the stomach by weakening the digestive powers. The practitioners believed that the intestines were being strained (probably because of the continual evacuation) and that the entire digestive system had become weak and worked slower and with greater difficulty than normal.

3.6.2 Dehydration

This was understood to be the first sign of death. Any marked indication of dehydration, i.e., excessive loss of water from the body, was considered as dangerous. A loss of body fluid was understood to make the child completely dry. MBBS doctors likened the child to a plant without water and said that the child went into a shock, and becomes comatose. Dehydration was thought to cause death also, because of:

weakness and heat in the body (AW)*;
an electrolyte imbalance (MBBS);
water imbalance (FW*, AW);
malfunctioning of organs such as the heart, liver and brain (others); and
depression (FW).

3.6.3 Death

Death was believed to be the ultimate consequence. Many practitioners claimed to have had many cases of death due to diarrhoea. Death was in almost every case attributed to a lack of water in the system.

The major reason for being unable to prevent the death of a child was the advanced stage in which it was brought. If brought to an Anganwadi or Frontline worker, she recommended a doctor. By the time the mother took her child to the doctor (either with the help of the village personnel or directly) it was sometimes too late and severe dehydration had set in.

Apart from giving an I.V. drip, most practitioners seemed well equipped, both in terms of products and knowledge, to prevent death from dehydration.

3.7 FEEDING PRACTICES

Most practitioners advised mothers either to stop the child's intake of food altogether or to give food in a limited quantity. While this was true of solids the converse was recommended for liquids. There seemed to be a substitution of solids by liquid food or pure liquids (such as water). This tallied with what the mothers had reported.

Only in the Panchmahals district did Anganwadis and MBBS doctors say that the child should be fed with as much food as possible. The Anganwadis say that more food than normal should be given and that it should be given

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* AW : Anganwadi worker
FW : Frontline worker

in smaller quantities with an increased frequency; the former, because the child needed to get energy, i.e., since the child evacuated most of the food that was given, if an increased amount was given, some part would be absorbed by the system. Lesser quantities at frequent intervals were advised as they believed that the child's intestines (which were weakened by the diarrhoea) should not be burdened by a large quantity at a time.

One frontline worker said that if a limited quantity of food was not given, the stomach would bloat, leaving the arms and legs thin.

All practitioners, like mothers, worked on the assumption that the digestive system became weaker with the disease and hence should not be overburdened. Most practitioners felt that any food would strain the digestive system and hence only nourishing, energy-providing liquids should be given.

Those who spoke of modified food, said that the food should be "light", as that "heavy" food (such as oily, fried, or excessively sweet food) overburdened the digestive system.

A large variety of liquids was advised. Included among these were the ORS and SS solutions.

Since practitioners perceived the two major consequences of diarrhoea to be weakness and dehydration, they advised a diet which took care of both these and at the same time did not further disturb the intestinal functions.

Practitioners believed that mothers were very negligent of their child's diet and did not change the diet to one with "light" food as required. Though mothers claimed to "lighten" the diet, this might in fact be an overclaim.

3.7.1 Staple, Normal Diet

The staple diet coincided with what mothers had said. *"Chapatis"* (of millet, wheat and barley), rice, vegetables, pulses, etc., were thought to comprise the normal diet. However, there seemed to be a strong bias towards *"chapatis"* and less towards rice, probably because the other cereals grew more abundantly in these areas. Details of food given follow:

3.7.2 Feeding During Diarrhoea

3.7.2.1 *Older children*

Children who were not on breast milk were literally given a watered down version of their normal diet with a little more emphasis on rice than before. Food which was light, soft and easily digestible was usually recommended; food and fluids such as the following:

khichri (pulses and rice);
fruit (apple, bananas);
moong water;
glucose water;
goat milk;
buttermilk (with cumin seeds and salt);
rice water *(kanji)*;
tea;
fruit juice;
dried grapes boiled in water with a pinch of salt and two spoons of sugar (town MBBS);

bread and butter (mentioned by a town doctor);
coconut water;
soup of pulses;
yoghurt; and
lemon juice (sherbet)

Food which was banned as it was believed to exacerbate the diarrhoea, or "heavy food" comprised:

fried food;
oily food;
chapatis of wheat, millet or barley ;
cold milk;
spicy food;
fruits/vegetables with seeds;
"gassy" or gas-producing food;
milk;
peanuts, gram;
cold food (pulses, vegetables, rice, etc.); and
stale food

Also food which was left uncovered was prohibited.

The entire thrust of the diet was geared to providing the child with more liquids (sometimes at the cost of giving solids) so that the water which had been lost could be replaced and energy could be infused into the child.

Some frontline workers felt that this new soft/liquid diet which was prescribed could only be followed by some relatively affluent households. They felt that the poor would not be able to change the diet, as some of the items were quite expensive, e.g., glucose water, dried grapes, rice, bananas, etc.

3.7.2.2 *Neonates*

Most practitioners in the Amreli district usually advised that breastfeeding should be decreased or stopped altogether. Frontline workers believed that doctors told mothers to stop breastfeeding. They advised the opposite. While all frontline workers advocated a constant consumption of breast milk, the others, Anganwadi workers and other non-MBBS doctors, felt that it should decrease. The latter feeling was because they believed:

the mother's breast needed rest;
milk should be substituted by water because the child needed to have water replaced ; and
the number of feeds should be decreased.

In the other districts (Panchmahals and Kutch), practitioners were in favour of breastfeeding. However, as in Amreli, there seemed to be some feeling among frontline workers that doctors advocated the discontinuation of breast milk. This did not, however, seem to be true.

Breast milk was advocated and in quantities similar to the child's normal diet, since it was believed:

that it was the only source of nutrition for the baby;
the child got energy through breast milk;

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there were antibodies in breast milk which prevented (further) diarrhoea;
breast milk rehydrated the child; and
it was a stable and sterilized diet.

Breast milk, it was believed, could be replaced by cow or buffalo or goat milk if the mother was unable to feed the child. During diarrhoea it was supplemented with liquids such as lemon sherbet, glucose water, fruit juice, plain water, etc.

Some frontline and Anganwadi workers who felt that diarrhoea could be caused by contaminated mother milk,said that the mother should modify her diet (as older children did) when breastfeeding. One frontline worker in the Amreli district went as far as to say that a lactating mother should have glucose water so that the baby could have the benefits of it.

3.7.3 Post-diarrhoeal Feeding

After the episode was over, practitioners believed that the child should have light food for a day or two, i.e., the diarrhoeal diet should be extended for a few days. They said that the diet should slowly change from a completely liquid one during diarrhoea to a semi-solid one (with pulses, rice, apple, biscuits, *khichri*, etc.). After a week or so when the child was normal, it should be given vegetables and *chapatis* (two of the "heaviest" food).

All practitioners were unanimous about the dietary shift and the feeding necessary after a diarrhoeal episode.

3.8 TREATMENT

Practitioners do not seem to be aware of the different remedies that can be practiced at home and are rather more well versed with medicines.

3.8.1 Traditional (Including Home) Remedies

There was a feeling among some practitioners that mothers were moving away from relying heavily on home remedies and were responding more and more to non-traditional forms of treatment. This corroborated the hypothesis postulated earlier that though the mother still followed traditional behaviour patterns (home remedies initially, followed by "vaids", followed by doctors/ hospitals) she compressed the time she spent on experimenting with home remedies. This reduced the total lead time and simultaneously indicated her decreased reliance on home remedies.

Home remedies recommended were usually in the form of fluids available at home. Only a few practitioners knew about non-fluid remedies.

Fluids available at home which were recommended have been described in the section under "feeding practices" and are detailed in an appendix.

Mothers were believed to follow such non-fluid remedies as:

Kangrashi (*kangsiro**) and *pipal* and tamarind mixed in water;
Buttermilk and salt and cummin seeds;
*Khandrativati**;
*Shilokhaladi**;
Nutmeg;

---

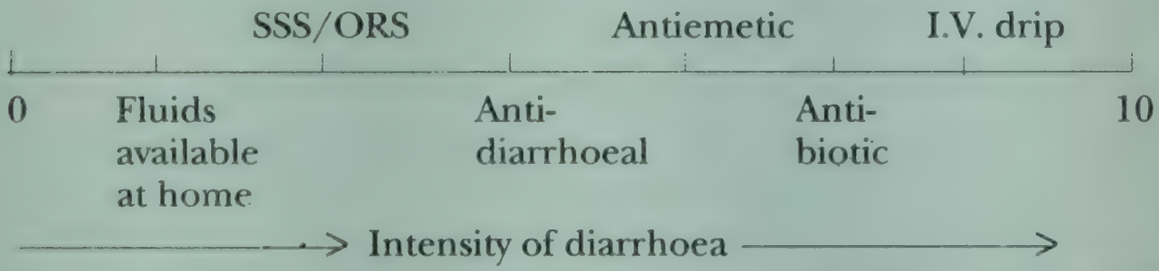
* Indigenous names

Harade;
Millet powder;
Avla aachar;*
Opium; and
Silver-gold leaf boiled in water.

Practitioners had no faith in these remedies but knew that mothers followed them.

3.8.2 Medical Treatment

Medical treatment was largely restricted to electrolytes and anti-diarrhoeals. Only MBBS doctors and the non-qualified "doctors" spoke of antibiotics. The treatment was seen to vary with the intensity of diarrhoea as follows:



Most treatment was usually restricted to fluids available at home, ORS/SSS, and anti-diarrhoeals. Other treatment was out of the purview of both Anganwadi and frontline workers. If the diarrhoea was not brought under control with this, then the patient was recommended to a doctor or a hospital. While most had been trained to dispense this advice, some claimed to have overheard doctors recommending it.

The commonest medicine seemed to be pectin-kaolin mixture. Other medicines mentioned were:

SG tablets (an ayurvedic cure);
BHP tablets;
APC tablets;
Sulphaguanidine;
Mexaform; and
Entero Quinol.

A list of such medicines is given in an appendix.

Some practitioners claimed to advise them about the consequences of diarrhoea, viz. dehydration. They said that they tried to teach the mothers either through the ayurvedic way or through their own experience with the disease.

The first step in all diarrhoea cases was claimed to be the rehydration therapy. ORS packets seemed to be widely recommended and used. MBBS doctors, who were the only practitioners who claimed to administer injections and I.V. drips, said that they used such measures only if the diarrhoea was extremely severe and the child was acutely dehydrated. Wherever possible oral therapy was preferred. Some believed that antibiotics made the person worse and hence were relied on only if absolutely necessary.

Anti-diarrhoeals were perceived to cure diarrhoea by making stools more solid, and antibiotics by killing the germs or the infection in the stomach.

Even practitioners who dispensed both ayurvedic and allopathic medicines, believed that allopathic cures and oral rehydration therapy were the only cures for diarrhoea and dehydration.

3.9 ORAL REHYDRATION THERAPY (ORT)

ORT was widely practiced across the state by all practitioner types. Since dehydration had been recognized as one of the primary and most dangerous consequences of diarrhoea, rehydration was a natural followthrough. Most practitioners had learnt of ORT in the course of their study or training. Others had heard of it through various sources such as:

a Government campaign during the time of the cholera epidemic in 1980-81 (frontline worker in Kutch); and
by word-of-mouth from qualified doctors.

Oral rehydration therapy was advised in three ways:

i. Fluids available at home such as *moong* water, buttermilk, rice *kanji,* coconut water, etc.;
ii. sugar salt solution; and
iii. ORS packets.

The major gap between mothers and practitioners seemed to lie in their awareness and use of rehydrants. Practitioners though very knowledgeable, did not seem to be communicating their knowledge fully. While mothers fed the children a large quantity of liquids and semi-solid food, they did not seem to realize the importance of such feeding. Hence, an effort needed to be made to disseminate the information practitioners had. Coming from such credible sources, mothers would probably adopt these remedies very quickly.

3.9.1 Oral Rehydration Salts (ORS), Electral and Branded Electrolytes

Anganwadi and frontline workers seemed more familiar with the Government ORS packets than with other (branded) electrolytes. MBBSs seemed to be aware of virtually all branded electrolyte powders.

ORS was usually referred to as dehydration powder, or just packaged powder. Some called it "glucose".

By and large awareness of the ingredients was fairly high with most saying that the packets contained some salts and minerals. Some even specified the minerals, which were believed to be Sodium Chloride, Magnesium, Potassium or Potassium Chloride, Soda Bicarbonate, and Calcium. By and large, ORS was thought to contain only three salts —sodium, potassium and magnesium.

The packets were dispensed by Anganwadi and frontline workers and were usually sold by others. The packets were probably in short supply, because they were handedout with discretion. The packet was given in any of the following ways:

on its own, i.e., one whole packet;
in small doses, i.e., a part of the packet; or
mixed with water and given as a solution.

The whole packet was given only when:

the case was perceived to be severe; and
patients from outside their own village had come for treatment.

Some gave the entire packet but recommended that it should be used only a little at a time.

Some frontline workers in the district of Amreli said that the villagers refused to take any medicine which was dispensed free, as they felt that it was worthless and hence, it was being dispensed free. To overcome this barrier, they made the powder into a solution and dispensed the solution instead. Some demonstrated the method of preparation, i.e., showed villagers the proportion of powder to water. Instructions regarding proportions did not vary considerably among practitioners.

Standard instructions were either one packet in one litre of water or one spoonful in one glass or cup of water. One MBBS said that he recommended lemon juice mixed with Electral and a pinch of salt.

Some said they made it with $1\frac{1}{2}$ spoon of powder and one cup of water and then altered the proportions to taste. However, an excess of powder was not believed to be good for the child.

They recommended the solution to be given at regular intervals all through the day. One Anganwadi worker in the Panchmahals district said that ideally one glass of mixture should be given after each motion. Some even specified that the solution should be finished within twelve hours. Most practitioners said that the water needed to be boiled and cooled before being mixed with ORS.

ORS was seen to serve mainly one purpose, viz., to replace electrolytes and salts that had been lost in the course of the disease.

Apart from this ORS was believed to:

give energy to the child;
stop diarrhoea (only one practitioner);
stop the thirst;
decrease the burning sensation in the stomach; and
give the child nutrition.

In terms of its action, it was seen as close to glucose, saline (referred to as "glucose bottle given by injection") and SSS.

MBBSs seem to view ORS slightly differently. While they believed it was good, effective, and necessary some felt that it could be injected. Some felt that villagers did not, and could not, understand the necessity of ORS and preferred to give their child the I.V. drip ("glucose bottle"). One, in the Kutch district, said that he recommended ORS only to those parents who could afford to pay for it. Since patients were usually very poor he claimed to prescribe mainly fluids available at home like rice *kanji,* glucose and salt water.

Compared to SSS, the ORS was believed to be more effective, primarily because it had more salts. Some frontline workers felt that mothers had great faith in the packet as they believed it would cure diarrhoea. Frontline workers too preferred advising the packet, but in the event that it was not available, prescribed the sugar salt solution.

3.9.2 Sugar Salt Solution (SSS)

Practitioners were aware of the sugar salt solution and claimed to recommend it widely. It was believed to have the same action as the ORS and to have the additional advantage of being cheap. Since it could be made at home it was

considered as a household remedy, unlike the ORS mixture which needed to have ingredients brought from outside.

SSS was prepared in different ways. The compositions are listed in an appendix.

The reasons cited for the use of SSS are given below:

it had calories which were essential for the baby's nutrition;
it was inexpensive and so could also be used by poor people;
it decreased the thirst of the child;
it gave the child energy;
it replaced lost water;
it stopped the child from feeling weak;
it replaced electrolytes;
it helped wet the child's dry mouth; and
it removed weakness.

Practitioners seemed to have heard of SSS through the same sources as they had heard of ORS — training programmes during the course of their education, from officials of CARE, etc.

4. MEDICAL RETAILERS

4.1 RESPONDENT PROFILE

Totally, 11 chemists were interviewed, 4 from the Panchmahals district, 4 from the Kutch district and 3 from the Amreli district.

Though all chemists were located at base towns they supplied both the towns people and the village folk.

Most respondents were unqualified to be chemists. While many did not have any degree, some were graduates (B.Sc/B.Com). One said he had done a diploma course in pharmacy.

4.2 CAUSES OF DIARRHOEA

Most chemists were not asked their opinion. However, some said that it had to do with a lack of hygiene. Some also felt that it had to do with heat young children who were playing barefoot in the hot sun were prone to getting diarrhoea.

4.3 ATTITUDES TOWARDS PREVENTION AND CURE

Only a few spoke of prevention. They said clean food, boiled water and a proper diet needed to be given to the child.

Cure was believed to be possible only with medicines (anti-diarrhoeals and antibiotics). Most felt that it was not possible to cure diarrhoea at home. Some believed firmly in home remedies and even, in one case, advocated them. They believed that villagers first tried some medicine on their own, either left-overs of the last prescription or some traditional home remedies, before approaching a doctor. This was corroborated both by mothers and by practitioners.

While most saw themselves as auxiliary practitioners i.e., believed they were capable of advising various medicines of their own accord, some saw themselves as a last resort. They claimed that patients were scared of doctors and hence preferred being treated by chemists.

In addition, chemists seemed to play the following roles:

treat cases of severe or acute diarrhoea as doctors were resorted to only for the mild cases (probably an overclaim);
make up a shortlist from the many medicines the doctor had prescribed.

While different chemists had different perceptions of their role, all of them believed that they helped in the selection of a doctor. They said that

patients often came to them to ask which doctor to go to and they recommended one on the basis of their knowledge of the doctors.

4.4 TYPES OF DIARRHOEA DISEASE

Diarrhoea was perceived to have many different types, the two commonest being plain diarrhoea (continual watery motions) and dysentery (accompanied by blood and pus).

Ordinary diarrhoea had stages which were defined by the number of motions passed in a day. If two or three motions were passed it was considered fairly normal. Acute diarrhoea was said to occur when a large number of motions were continually passed.

Diarrhoea was believed to occur through the year with the maximum number of cases in the summer. There seemed to be a definite link between diarrhoea and heat (either the season or as a cause). This was the view of mothers and practitioners as well.

4.5 DESCRIPTION AND SYMPTOMS

Chemists were not able to describe the symptoms and the stool as they usually did not ask about them, nor did they ever get to see them. At best, mothers told them about the intensity of the disease in terms of the number of motions the child was passing, and whether the child exhibited any accompanying symptoms, such as vomiting or blood in the stool.

4.6 CONSEQUENCES

While some did not specify what they perceived the consequences to be, others said that diarrhoea led to dehydration and, ultimately, death. Death was thought to set in even in a few days after the episode, if both diarrhoea (or dysentery) and vomiting took place simultaneously.

Some felt that diarrhoea was not a very serious disease as it could be controlled in a day or two with medicines. However, if not treated, it was believed to become dangerous enough to merit hospitalization and an I.V. drip.

4.7 FEEDING PRACTICE — ADVICE GIVEN

Chemists seemed to advise parents usually about the medicines they should take and rarely about their food. Those who did, said food should be reduced and milk should be drunk. Since mothers of their own accord softened and liquefied the child's diet during diarrhoea with the encouragement of health practitioners, chemists were probably not asked about the kind of diet that should be given.

4.8 TREATMENT — ADVICE GIVEN

Usually non-scheduled drugs (like all those for diarrhoea) were freely prescribed by chemists. This ususally comprised anti-diarrhoeals in a liquid or tablet form, such as:

Pectin-Kaolin;
Kaolin mixture;
Pektokab;
Entero Quinol;

Enteromycetin;
Pisulin-0; and
Gripe Water.

One said that doctors recommended opium for serious cases and Pectin-Kaolin for mild ones.

Some even recommended home remedies which they too followed, such as:

goti (a pill) made from 15 or 16 herbs;
dry ginger solution;
ground *khus-khus* (deopiated poppy seeds) mixed with water;
buttermilk with cumin seeds and salt; and
lemon juice *(sherbet)*.

ORS (Electral) was widely recommended by doctors and hence was sold.

Chemists, on the whole, seemed to play safe by recommending only those medicines which they knew would be completely harmless. They did not usually attempt to diagnose a disease either, but preferred to send mother to a doctor, hospital, or dispensary. This was true for diarrhoea also, though they felt that diarrhoea was one of the commonest diseases and was easy to treat.

4.9 ORAL REHYDRATION THERAPY (ORT)

Chemists were aware of oral rehydration salts (ORS) and other branded electrolytes. As such, salts were a frequent item on the doctor's prescription. Only a few, mainly in the Panchmahals district, were aware of the sugar salt solution (SSS). Chemists did not seem very familiar with the concept of dehydration and hence did not stress the importance of giving the child fluids. Even the few who were aware of dehydration did not take it upon themselves to educate the mother. While chemists played only a supportive role, it was necessary to educate them about the need for rehydrants, especially in cases where the doctor had prescribed a list of medicines and the chemist only dispensed some. The choice of the ones he gave the patient was determined by his experience and knowledge of the disease, as well as the socio-economic status of the family. This implied that Electral could be a frequently left out item. This then could explain, to some extent, the discrepancy between what health practitioners recommended and what mothers actually administered to their children. As illustrated earlier, there seemed to be a considerable gap between what practitioners claimed to prescribe and what mothers said they obtained — the former being more liquid and ORS-intensive than the latter.

4.9.1 ORS, Electral, and Branded Electrolytes

Virtually all chemists had heard of ORS, because virtually all doctors prescribed it. It was believed to work in the following manner:

cured weakness;
cured vomiting;
could be had instead of food hence gave energy; and
as a cooling, summer drink.

Some said it was prescribed in every case of diarrhoea. Others said it was only prescribed in the more severe or acute cases. Occasionally they recom-

mended it, but again only for the more acute cases i.e., where the child had more than 6-7 motions a day.

It was seen as similar to glucose and other "tonics" as it was also an energizer. In Bhuj, chemists said that villagers bought a lot of glucose from them and stocked it in their homes. If this was in fact the case, perhaps glucose could be used as an ingredient in preparing a rehydrant, or glucose could be promoted as a rehydrant. The incidence of glucose use would need to be verified in the quantitative phase.

The more popular brands of electrolyte powders were Electral, Medilyte and Haemilite. Most chemists had not seen the Government ORS packets.

4.9.2 Sugar Salt Solution (SSS)

The sugar salt solution was only known among some chemists in the town of Godhra, in the Panchmahals district. It was mainly prescribed for the poorer patients. They claimed to have heard of it, by word-of-mouth as it had been publicized in their area for a very long time. It was constituted as follows:

> lemon juice, plus salt, plus boiled water;
> 2 spoons sugar, plus $\frac{1}{2}$ spoon salt, plus $\frac{1}{2}$ a lemon (made to taste) to make one glass of lemon juice.

It was understood to be good for dehydration.

5. APPENDICES

APPENDIX A

Statistics of Population, Industry and Agriculture for Amreli District

	Total	Rural	Urban
Population (in millions)	1.10	0.88	0.22
%	100	80	20
Industry	**Product**		**Sales (Rs. crores)**
Units in operation:			
Gujarat Dairy Development	Dairy Product		1.46
Narmada Cement, Jafarabad	Clinker		-
Agriculture	**Area***		**Production** (1982-83)**
Bajra	87		87
Wheat	33		114
Jowar	55		20
Gram	14		9
Sugarcane	-		-
Groundnut	275		158
Cotton	23		25***
Sesamum	21		7

Panch Mahals District

	Total	Rural	Urban
Population (million)	2.30	2.05	0.25
%	100	89	11
Industry	**Product**		**Sales (Rs. crores)**
Units in operation:			
Bharat Vijay Mills, Kalol	Cloth, yarn, plastic containers		48.85
Devidayal Sales Pvt. Kalol	Agro-chemicals, organic chemicals		6.00
Gujarat Dairy Dev. Corpn.,Panch Mahals	Dairy products		2.19
Hindustan Gas & Industries, Nurpura	Oxygen gas, Nitrogen gas, Argon gas		1.64
Indian Rayon, Halol	Reinforced hose pipe C P hose pipe		2.19
Jyoti, Kalol	Ceramics, switch boards		5.02

* Area in '000 hectares
** Production in '000 tonnes
*** Production in '000 bales of 170 kg each

Industry	Product	Sales (Rs. crores)
Mahendra Mills, Kalol	Cloth, yarn	28.25
Navjivan Roller Flour & Mills, Dahod	Grainflour, Grainldal, Maida	8.17
Paushak, Panelav	Formulation, Phosgen gas, Carbaxyl	4.50
SLM Maneklal, Kalol	High pressure hoses	0.31
Safari Industries, Halol	Moulded luggage items	6.00
Shree Vallabh Glass, Limkheda	Raw material for sheet glass	Recently Commissioned

Agriculture	Area*	Production** (1982-83)
Rice	94	11
Wheat	32	56
Bajra	26	18
Gram	32	29
Maize	159	189
Cotton	36	28***
Groundnut	28	9

Kutch District

	Total	Rural	Urban
Population (in millions)	1.00	0.74	0.26
%	100	74	26

Industry	Product	Sales (Rs. crores)
Units in operation:		
Ambalal Sarabhai Enterprises, Kandla	Synthetic detergents	19.08
Hoechst Pharmaceuticals, Kandla	Pharmaceutical tablets	...
Indian Farmer's Fertiliser Co-op, Kandla	NPK	159.61
Lakme, Kandla	Perfumery, Cosmetics, Toilet preparations	2.64
Milton's, Kandla	Readymade garments, made-ups	...
Pond's (India), Kandla	Soap, cosmetic, detergents	7.30
Shri Mahila Griha Udyog Lijjat Papad, Ramania	Papad, agarbattis, leather art goods	...
Tata Oil Mills, Kandla	Toilet soap, toilet preparations	13.18

Agriculture	Area*	Production** (1982-83)
Bajra	102	46
Wheat	21	41
Jowar	77	8
Cotton	65	36***
Groundnut	78	46
Guarseed	64	40
Castorseed	17	5

* Area in '000 hectares
** Production in '000 tonnes
*** Production in '000 bales of 170 kg each
... Included in the company's main works located elsewhere

APPENDIX B

Information about the Villages

Estimated	Khijadia Radadiya	Sarambhada	Maghpar	Khavda	Darunia	Rampur
Total Population	2200	5000	1260	3000	1500	10461
No. of voters	750	Can't say	723	670	400	2100
Caste	%	%	%	%	%	%
Hindu	3	5	-	3	-	-
Brahmin/upper class	3	5	-	3	-	-
Landowning farmers	60	75	50	60	-	-
Non-landowning farmers	15	5	5	3	-	-
Trader class/ Banias	-	-	-	10	-	-
Untouchable/Harijans	10	5	25	10	-	-
Other	12	10	10	4	-	-
Dispersal of Castes	Patel-North Darbar-East Harijan-South	Patel/Brahmin/ SC/ST in middle and outskirts	East side harijan village well spread by Patels	Live together lanewise	Live together	Separate Harijan wadi
Facilities Existing in the Villages						
Co-operative (artisans, dairy products etc)	-	*	-	-	-	-
No. of co-operatives	-	1	-	-	-	-
Existence of schools for children	*	*	*	*	*	*

* Implies facility exists
\- Implies facility does not exist

	Khijadia Radadiya	Sarambhada	Maghpar	Khavda	Darunia	Rampur
No. of schools	1	2	1	2	1	2
Existence of schools for adults	-	-	*	*	*	*
No. of schools	-	-	1	2	1	2
Existence of village health/ Anganwadi/frontline workers	*	-	*	-	-	-
No. of frontline workers	1	-	1	-	-	-
Existence of electricity for agriculture/ irrigation	-	-	*	-	-	*
No. of users	-	-	40	-	-	4
Existence of electricity for lighting	*	*	*	*	-	*
No. of users	65	NS	30	NS	-	300
Existence of flour mill/ chakki	*	*	*	*	-	*
No. of flour mills/chakkis	1	3	1	4	-	7
Existence of Radio Transmission	*	*	*	*	*	*
No. of sets	NS	100	700	150	3	1300
Existence of TV Transmission	-	*	*	*	-	*
No. of sets	-	2	3	60	-	5
Existence of Provision Stores	-	*	-	*	-	*
No. of stores	-	1	-	2	-	3
Existence of Medical Stores	-	-	-	-	-	*
No. of stores	-	-	-	-	-	4
Total no. of homes	200	600	250	750	-	-
Kuchha homes	175	500	15	700	NS	NS
Pucca homes	25	100	235	50		

	Khijadia Radadiya	Sarambhada	Maghpar	Khavda	Darunia	Rampur
Rain						
During Monsoons						
None	-	-	-	-	√	-
Very little	√	-	√	√	-	√
Enough	-	√	-	-	-	√
During Winter						
None	√	√	√	√	√	-
Very little	-	-	-	-	-	√
Enough	-	-	-	-	-	-
Water sources						
For Drinking water						
Wells	1	2	3	7	-	2
Hand pumps	1	-	-	-	2	-
Tubewells	-	-	1	-	-	2
River	-	1	1	-	1	1
Pond	-	-	-	1	-	3
Water Tap	-	-	-	14	-	-
For Agriculture						
Wells	-	300	-	-	-	-
Hand pumps	-	-	-	-	-	-
Tubewells	-	-	-	-	-	-
River	-	-	-	-	-	-
Pond	-	-	1	-	-	-
Water tap	-	-	-	-	-	-
For Home use						
Wells	-	-	-	-	-	-
Hand pumps	-	100	-	-	-	50
Tubewells	-	-	-	-	-	-
River	-	-	-	-	1	-

	Khijadia Radadiya	Sarambhada	Maghpar	Khavda	Darunia	Rampur
Pond	-	-	-	-	-	-
Water tap	-	-	-	10	-	-
Where water sources located	Middle in the village	East side	West side near prime school	North side	All over	All over
Where salt obtained from	Amreli	Amreli	Gundiyani Near Mandvi	Bhuj	Godhra	Godhra Provision store
Type of sugar/ obtained from						
Sugar	Amreli	Amreli		)Not	)Bhanpuri	)Rajnand
Jaggery	Amreli	Amreli	)	)specified	)	)gaon
Jaggery medium			) Bhuj			
Jaggery large			)			
Where chemist located	Amreli	Amreli	Bhuj	Bhuj	Farsaguda	Not specified
Nearest Anganwadi PHC Location	No arrangement	Medi	In the Village	In the Village	In the village	In the Village
Frequency of visits	Nil	Everyday	Everyday	Everyday	Not at all	Everyday
Where nearest Hospital located	Amreli	Amreli and 1 health centre in the village	Baldia	In the Village	Farsaguda	Chanky
Type of medics/no. of medics						
Doctor (MBBS)	Not specified	-	-	2	-	-
M/P from Chital	-	7	-	-	-	-
MP	-	1	2	-	-	-
Vaid	-	1	-	-	-	-
Government Doctor	-	1	-	-	-	1

	Khijadia Radadiya	Sarambhada	Maghpar	Khavda	Darunia	Rampur
Ayurvedic Doctor	-	-	-	-	1	-
Private Doctor	-	-	-	-	-	2
Disposal of Household Garbage	Compost and dug in well	Thrown into Ukirda	Thrown on open ground far away	Dumped in Khadda outside village	Outside the house	Dumped outside the house
Transportation Modes						
Base town	Train, Private Rickshaw, Bus	Bus	Bus	Bus	Walking/ Cycle	Bus, Motor-Cycle, Ambulance
Other Villages	Train, Private Rickshaw, Bus	Bus	Bus	Bus	Bus	Bus
No. of roads to the village	1	2	1	Not specified	1	1
Main Crops of the Village	Groundnuts	Wheat,ground-nuts, millet	Wheat, Rayado	Bajra, Jawar Wheat	Dhan, Mudia Urad, Kutki Jao	Rice,Long, Kodra, Kadura
Other Crops of the Village	Jira,Wheat	Moong,Matki Jawari	-	Moong Dal	-	Wheat, Chaner
Type of fruits/ season in which grown						
Lemon	Whole year		-			
Apple			)			
Chikku			) Whole year			
Grapes			)		NS	NS
None		✓		✓		
Type of vegetables/season in which grown						
Potatoes	)	Whole year	Whole year			
Cabbage	)Whole year	-			NS	NS
Brinjal	)	Whole year	) Whole	) Not		
Chilli	)	-	) year	)Specified		
Green salad	)	)	-			

	Khijadia Radadiya	Sarambhada	Maghpar	Khavda	Darunia	Rampur
Turia		)Whole	-			
Tomato		) year	Whole year		-	-
Dudhi	-	-	Whole year	-		
Gajar				) Not		
Onion				)Specified	NS	NS
Types of cereal/season in which grown						
Wheat	Whole year	Not specified	-	)Not		
Jowar	-		-	)Specified	NS	NS
Bajra	-	) Not	-	)		
Rice	Whole year	) specified	-			
Existence of untouchability	Yes	No	No	No	No	No
Presence of market	No	No	No	No	No	No

NS - Not specified

APPENDIX C1

Information from Mothers

	Saram-bhda	Khijadia	Rampur	Darunia	Khavda	Meghpar
No. of joint families	14	13	16	8	10	9
No. of adults						
1-2	3	3	4	2	5	2
3-4	4	2	4	5	2	3
5-6	1	2	5	-	1	2
7-10	5	4	2	-	-	-
11+	-	1	-	-	-	-
Not specified	1	1	1	1	2	2
No. of children						
1-2	8	3	5	1	2	1
3-4	3	8	10	4	6	3
5-6	2	1	-	2	-	2
7-8	-	-	-	-	-	1
Not specified	1	1	1	1	2	2
No. of single unit families	3	5	1	9	6	8
No. of adults						
1	-	-	-	1	-	1
2	2	5	1	6	6	3
3-4	1	-	-	2	-	2
5-6	-	-	-	-	-	2
No. of children						
1	-	3	-	2	2	1
2	2	-	-	2	-	2
3	-	1	-	3	3	2
4	-	-	1	1	1	2
5	1	1	-	1	-	1
Average no. of children/ respondent						
No. of respondents	17	18	17	17	16	17
1	4	4	2	2	3	1
2	7	4	4	6	1	3
3	2	5	7	4	6	2
4	2	4	4	2	4	4
5	1	1	-	2	1	2
6-11	1	-	-	1	1	5
No. of children aged 2 years						
1	16	15	11	9	10	15
2	-	-	-	-	-	-
No. of children aged 2-5 years						
1	12	12	15	15	13	14
2	2	1	1	-	4	4
3	-	-	-	-	-	1

	Saram-bhda	Khijadia	Rampur	Darunia	Khavda	Meghpar
Children aged above 5 years						
1	3	15	15	8	12	15
2	1	2	2	4	2	5
3	2	-	-	3	1	3
4	-	-	-	-	-	1
Illness of children up to 2 years						
Respondents having children	16	15	11	9	10	15
Illness						
Diarrhoea	15	14	11	9	10	15
Dysentery	3	2	2	2	-	-
Cholera	-	-	2	-	1	5
Cold/Cough/Fever	3	4	5	4	6	4
Chicken Pox	-	-	-	-	-	-
Others	3	3	2	6	-	6
Illness of children aged 2-5 yrs						
Respondent having children up to 2-5 years	14	13	16	15	17	18
Illness						
Diarrhoea	14	2	4	6	9	11
Dysentery	-	3	1	1	1	-
Cholera	-	1	1	-	-	3
Cold/Cough/Fever	14	4	3	2	5	2
Others	2	3	1	5	3	2
Occupation of Respondents						
All respondents	17	18	17	17	17	17
Working	14	10	17	13	8	8
Non-working	3	8	-	4	9	9
Kind of work						
Working respondents	14	10	17	13	8	8
In the fields	-	5	6	4	-	2
Tend to care/ feed livestock	-	-	5	-	-	-
Others	14	5	7	9	8	6
No. of hours spent working in the fields						
Up to 3-5 hours	6	-	5	6	-	5
Up to 6 hours	2	3	10	1	-	-
Up to 8 hours	-	3	-	1	-	1
Up to 12-13 hours	-	-	1	-	-	1
Not specified	6	4	1	5	8	1
Care of children						
Working respondents	14	10	17	13	8	8
Take all children along	-	2	-	4	4	-
Take only young kids along	7	-	6	4	4	-

	Saram-bhda	Khijadia	Rampur	Darunia	Khavda	Meghpar
All respondents	*17*	*18*	*17*	*17*	*16*	*17*
Leave all behind with someone	4	4	9	3	-	3
Leave all behind alone	2	4	-	1	-	4
Not specified	1	-	2	1	-	1
Type of house						
Kuchha	9	6	16	17	10	16
Kuchha/Pucca	6	11	1	-	6	1
Not specified	2	1	-	-	-	-
No. of rooms						
1	6	1	4	7	5	5
2	6	14	8	10	5	12
3	1	1	3	-	5	-
4	3	1	2	-	1	-
Not specified	1	1	-	-	-	-
Sources of drinking water						
Well	3	1	14	9	1	-
Tap	8	-	1	-	8	4
Tubewell	2	16	1	8	7	8
Not specified	4	1	1	-	-	5
Sources of other water						
Well	3	1	14	9	1	-
Tap	8	-	1	-	8	4
Tubewell	2	16	1	8	7	8
Not specified	4	1	1	-	-	5
Type of container for drinking water						
Wide/open-mouthed	17	17	17	17	16	16
Not specified	-	1	-	-	-	1
Type of container for other water						
Wide/open-mouthed	16	17	12	17	16	17
Not specified	1	1	5	-	-	1
Whether livestock kept						
Yes	10	9	9	10	9	6
No	3	6	1	1	1	4
Not specified	4	3	7	5	6	7
Where livestock kept						
Within the house	2	2	8	7	2	-
Separate	4	4	1	1	4	4
Not specified	4	3	-	2	3	2
Where people usually go to toilet						
Latrine near the house	-	3	-	-	-	-
Open fields	15	14	17	17	16	17
Not specified	2	1	-	-	-	-

	Saram-bhda	Khijadia	Rampur	Darunia	Khavda	Meghpar
All respondents	*17*	*18*	*17*	*17*	*16*	*17*
Where infant stools disposed off						
Fields	15	6	5	9	1	2
Inside the house in garbage	-	-	-	-	6	6
Inside the house in toilet	-	1	-	-	-	-
Not specified	2	11	12	8	9	9
Whether Radio listened to						
Yes	3	9	10	3	7	7
No	12	5	1	13	8	5
Not specified	2	4	6	1	1	5
Whether TV viewed						
Yes	-	-	-	-	-	-
No	13	18	1	10	12	12
Not specified	4	-	16	7	4	5
Whether newspaper read						
Yes	-	-	11	1	3	-
No	14	6	1	13	12	12
Not specified	3	12	5	3	1	5
No. of calendars/posters						
1	10	13	9	11	10	6
2+	2	1	7	2	1	-
None	-	-	-	-	-	3
Not specified	5	4	1	4	5	7

APPENDIX C2

Information from Health Practitioners

	Frontline Workers		Other Medical		
	Anganwadi/ ICDS	Others	MBBS	Others	N.S.
All respondents	7	6	2	4	2
Length of Practice					
1 week	1	-	-	-	-
3 months	2	1	-	-	-
8 months	1	-	-	-	-
2 years	-	1	-	-	-
3 years	2	1	-	-	-
5 years	-	-	1	-	-
8 years	-	1	1	1	-
10 years	-	-	-	2	-
17 years	-	-	-	-	1
22 years	-	-	-	1	-
Not specified	1	2	-	-	1

	Frontline Workers		Other Medical		
	Anganwadi/ ICDS	Others	MBBS	Others	N.S.
All respondents	7	6	2	4	2
Full time/Part time					
Full time	4	3	1	4	-
Part time	1	3	1	-	-
Not specified	2	-	-	-	2
Type of training					
Anganwadi training	1	1	-	-	-
1) from Junagad	1	-	-	-	-
2) 3 months experience in Anganwadi	2	-	-	-	-
3) 1 week training in Anganwadi	1	-	-	-	-
Training from "CARE" health centre	1	-	-	-	-
CHV Training	-	2	-	-	-
Working as CHV - doctor	-	1	-	-	-
Nurses course 3 years	-	1	-	-	-
Nurses training - $1^1/_2$ year	-	1	-	-	-
MBBS	-	-	2	-	-
BJ Medical College	-	-	-	1	-
Ayurvedic supervisor training in health centre	-	-	-	1	-
Registered after SSC	-	-	-	1	-
Educated in Jamnagar	-	-	-	1	-
Not specified	1	-	-	-	-
Language of Interview					
Gujarati	7	6	2	4	2
Type of medicine					
Allopathic	4	5	2	3	-
Ayurvedic	1	1	-	-	-
Homoeopathy	-	-	-	1	-
Not specified	2	-	-	-	-

APPENDIX C3

Information from Retailers

	Towns
	Nos.
All respondents	10
1) Length of practice	
1 year	1
2 years	1
4 years	1
5 years	2

	Towns No.
10 years	1
14 years	1
18 years	1
21 years	1
32 years	1
2) Training/license	
Pharmacist	3
Diploma in Pharmacy	1
Working experience	3
Pharmacy course	2
Not specified	1
3) Full time	9
Part time	1
4) Medicine stocked	
Allopathic	
Ayurvedic	

APPENDIX D

Glossary of Terms

English	Local Term
Betelnut	*Supari*
Blood	*Lohi*
Boils	*Gumda*
Burning	*Kodudu, Balatra*
Burning in stomach	*Pet ma balay*
Buttermilk	*Chaas*
Cholera	Cholera
Cumin seed	*Jeera*
Deopiated poppy seeds	*Khus-khus*
Diarrhoea	*Jhada*
Die	*Mati jaye*
Dysentery	*Mardo*
Eat	*Chibhada*
Evil eye	*Nazar lagi jay*
Gas	*Vayu*
Glucose	Glucose
Green	*Hara*
Hiccup	*Aajki aavti hati*
Indigestion	*Hajro*
Irritable	*Chidiyo*
Juice	*Sherbet*
Mint	*Fudina*
Mother's milk	*Dhan*
Neem	*Alasia*
Nutmeg	*Jaiphal*
Opium	*Afene/Tala*
Pain	*Dard*
Pain in stomach (colic)	*Chunk/Aati pade*
Pot	*Matka*
Pus	*Paroo*
Solid and watery	*Barki barki*
Sore throat	*Galu padi jay*
Stomach problems	*Sari pade*
Sweet	*Shiro/maisuk*
Thread tied	*Kepho Bandhelo*
Witch doctor	*Bua*

APPENDIX E

Food List

Black pepper	*Mari*
Clarified butter	*Chopad*
Corn	*Makai*
Cumin seed	*Jeera*
Fleaseed husk	*Isabgol*
Mustard	*Rai*
Peanuts	*Bhutadi*
Pearl millet	*Bajra*
Pomogranate	*Dadam*

APPENDIX F

Medicine List

	Frontline Workers Anganwadi/ ICDS		Others		Other Medical MBBS		Others		N.S.	
	Recm	Stk	Recm	Stk	Recm	Stk	Recm	Stk	Recm	Stk
Type of medicines										
Arenjuns	-	-	*	-	-	-	-	-	-	-
Ampicilin	-	-	-	-	*	-	*	*	-	-
BHP	-	-	*	-	-	-	-	-	-	-
Caralen Powder	-	-	*	-	-	-	-	-	-	-
Chloramphenicol	-	-	-	-	-	-	*	*	-	-
DHK	-	-	*	-	-	-	-	-	-	-
DSP	-	-	*	-	-	-	-	-	-	-
Dianesh Mix	-	-	-	-	*	-	-	-	-	-
Electral	-	-	-	-	*	-	-	-	-	-
Glucose water	*	-	*	-	-	-	-	-	*	-
HK	-	-	-	-	-	-	*	-	-	-
HC	-	-	-	-	-	-	*	-	-	-
IV - fluids	*	-	*	-	-	-	*	-	*	-
Intracunal tablets	-	-	-	-	-	-	*	-	-	-
Jeskisulpha	-	-	-	-	*	-	-	-	-	-
Kadin mix	*	-	*	-	-	-	*	-	-	-
Kadin - pectin mix	-	-	*	-	-	-	-	-	-	-
Mexaform	*	-	-	-	-	-	-	-	-	-
Metranidizol	-	-	-	-	*	-	-	-	-	-
Netrogen	-	-	-	-	-	-	*	*	-	-
Neomycin	-	-	-	-	-	-	*	-	-	-
ORS liquid	*	-	*	-	-	-	-	*	-	-
ORS packet	*	-	*	-	-	-	-	-	-	-
Peditral	-	-	*	-	-	-	-	-	-	-
Streptomagma	-	-	-	-	*	-	-	-	-	-
Sulphuriodine	-	-	-	-	-	-	*	*	-	-
Sulphur-peridine	-	-	-	-	-	-	*	*	-	-
Streptomycin	-	-	-	-	-	-	*	-	-	-
Sulphamycin	-	-	-	-	-	-	-	-	*	-
Tetracyclin	-	-	-	-	-	-	*	-	-	-
Terramycin	-	-	-	-	*	-	-	-	-	-
Tinidazole	-	-	-	-	*	-	-	-	-	-
Not specified	*	-	-	-	-	-	-	-	-	-
Ayurvedic										
Kapilak chooma	-	-	*	-	-	-	-	-	-	-
S.G. Tablets	-	-	*	-	-	-	-	-	-	-

APPENDIX G

Methods of Preparation of SSS

Ingredients	Amount
Mothers	
1. Water	NS
Sugar	NS
Salt	1 pinch
2. Water	1/2 glass
Sugar	1 handful
Salt	1 pinch
3. Water	NS
Salt	To taste
Sugar	2 fingers + thumb pinch
4. Water	50 gm
Sugar	25 gm (2 spoons)
Salt	25 gm (2 spoons)
5. Water	NS
Sugar	1 handful
Salt	1 pinch
Lemon	NS
6. Water	NS
Sugar	1 handful
Salt	3 pinches
7. Water	1 glass
Sugar	1 spoon
Salt	1 spoon
8. Water (boiling)	NS
Sugar	1/2 tsp
Salt	1/2 tsp
9. Water	1/2 kg = 2 glasses
Sugar	1 tsp/handful
Salt	1 pinch
Health Practitioners	
1. Water	1 *lota*
Sugar	1 pinch/spoon
Salt	1 spoon
2. Water	1/2 glass
Sugar	NS
Salt	1 pinch
3. Water	NS
Sugar	4 spoonfuls
Salt	1 small spoon
Baking soda	NS
4. Water	1 cup
Sugar	2 spoons
Salt	1/4 spoon
Lemon juice	NS

Ingredients	Amount
5. Water	1/2 glass
Sugar	1 teaspoon
Salt	1 teaspoon
6. Water	NS
Sugar	100 gm
Salt	1 pinch
Lemon juice	NS
7. Water	NS
Sugar	1 spoon
Salt	Little bit
8. Water	NS
Sugar	1 spoon
Salt	1 pinch
9. Water	200 gm
Sugar	1 palmful
Salt	1 pinch (2 fingers + thumb)
10. Water	1 glass
Sugar	NS
Salt	NS
Lemon	NS
Baking soda	NS
11. Water	1 cup
Glucose	1/4 spoon
Salt	1 pinch
Retailers	
Water	1 glass
Sugar	2 spoons
Salt	1/2 spoon
Lemon	1/2 lemon

MADHYA PRADESH

1. INTRODUCTION

1.1 STATE PROFILE

Madhya Pradesh, as the name suggests, is located in the centre of India. It has a population of 52 million people, 80% of whom live in rural areas. Madhya Pradesh has been divided into 45 administrative districts. However, on socio-cultural parameters, it has been divided into five large socio-cultural regions.

Madhya Pradesh is one of the less developed states of India. On an economic development index rating (All India = 100) Madhya Pradesh has a score of 62.

Madhya Pradesh is less densely populated than the average state of India and scores less than the national average on development criteria such as urbanization, literacy, and rural electrification.

The state is agricultural, rather than industrial in nature. Three-fourths of the labour force is employed in agriculture, as compared to the national ratio of two-thirds on the same parameter. However, agricultural methods appear to be conventional as indicated by low levels of gross irrigated area (33% of the national average), per capita fertilizer consumption (50% of the national average) and per capita bank credit for agriculture (60% of NA).

Keeping in mind the socio-cultural regions and the administrative districts, we divided Madhya Pradesh into four regions for purposes of this research. Four districts were selected, one from each region. These districts have been profiled below.

1.2 DISTRICT PROFILES

1.2.1 Shivpuri: Base town Shivpuri (District Headquarters)

Of the four districts, Shivpuri has a relatively low level of economic development (index rating 44). It is largely agricultural, and 87% of its people live in rural areas. It is thinly populated as compared to the average for Madhya Pradesh.

The main crops in Shivpuri are wheat and gram. There are no major manufacturing units, either operational or planned in this district.

1.2.2 East Nimar: Base town Khandwa (District headquarters)

East Nimar has a fairly high level of economic development (index rating 80). Only 73% of the population live in rural areas. 26% of its labour force is employed in the non-agricultural sector. The literacy rate is higher than the Madhya Pradesh average.

The major crops in East Nimar are the banana, cotton and jowar. There are major paper and oil mills and yarn manufacturing units in this district.

1.2.3 Durg: Base town Balod

Of the four districts, Durg is the most densely populated, with more persons per sq. km. than the national average. In terms of economic development, Durg is representative of Madhya Pradesh (index rating 63). However, it has higher levels of urbanization (32%) and literacy (38%) than the MP average and scores the highest amongst all four districts on these counts. Almost a third of its labour force is employed in non-agricultural occupations.

The major crop of Durg is rice. It has several large and well known manufacturing units in operation and several others under implementation.

1.2.4 Bastar: Base town Jagdalpur (District Headquarters)

Of the four districts, Bastar is the largest in terms of area but the most sparsely populated. Over two-thirds of its total geographical area is covered by forests. 94% of the people live in rural areas and literacy is at a low level of 13%. The majority of the people (89%) are employed in agricultural occupations with the major crop being rice. No major manufacturing units exist at the moment but a few are under implementation. The economic development is low, the index rating being 44.

1.3 VILLAGE PROFILES

There was a total of eight villages in Madhya Pradesh where fieldwork was conducted. Each village was quite different from the other. We are attempting to draw comparisons or highlight differences.

Population : All villages were small, with less than 5,000 estimated population. Most villages had a predominantly Hindu population except Paladi and Arud (East Nimar district), where other tribal people formed approximately a third of the total.

Facilities : Two out of the eight villages had no schools. The six villages that did have them had an average of 2 schools each, including adult schools in two villages.

Health facilities in the form of frontline workers were only found in the two villages of Shivpuri district.

Only half the villages had electricity. All villages received radio transmissions and possessed several receiving sets, the minimum being in Bakel village (of Bastar) and the maximum being in Chauky village of Durg district. Provisions stores were restricted to villages of Shivpuri and Durg districts whereas the one solitary medical store amongst all villages was in Chauky village of Durg district.

Homes : The majority of homes were *kuccha*, i.e., without a concrete roof. The villages of Shivpuri particularly Singhniwas, had a larger proportion of concrete houses.

Rainfall : Rainfall was adequate in most villages during the monsoon season. There appeared to be little or no rainfall in winter months.

Water sources : Drinking water came primarily from wells and hand pumps. Data regarding agricultural water was only available from Shivpuri district where wells and tubewells were used. In Chauky village of Durg, hand pumps were used in homes for drawing up water for needs other than drinking.

In other villages, this water was drawn from rivers, ponds, and canals.

Medical services : Barring one village, none of the others had an Anganwadi/PHC in the village. Most of them were located in nearby towns. The two villages of Durg district had no Anganwadi centres in the block. Chemists again were located in nearby towns, often the district head-quarters. Two villages (one in Durg and one in East Nimar) had hospitals in the village. All others had to go to nearby towns.

Garbage was usually disposed of in pits outside the village.

Transportation : Only four of the eight villages were connected with base towns by public transport, i.e., buses. The others had to make their own arrangements to go from their village to the nearest bus stop, which was often done on foot. Transportation between villages in all, except one village, was usually by bullock carts or bicycles.

2. MOTHERS

2.1 MOTHERS' PROFILE

The women interviewed differed with the prosperity of the village they lived in. By and large, the villages were poor. The profile of the mother from a poor village* was as follows:

She was usually the wife of either a farmer (75%) or a labourer and often lived in a joint family (63%). She herself worked both at home and in the fields, (only 33% were just housewives), leaving house for approximately 4.5 hours every day. On an average she had two or three children.

These women and their families usually used open fields as their latrines. Their water sources were varied — hand pumps, wells, lakes, rivers. Some of them stocked drinking water in open-mouthed containers.

Their exposure to the outside world was minimal with only 25% of them listening to the radio. They were mostly illiterate, except for women in Limoia (Durg), some of whom had been educated up to middle school level. These women (from Limoia) also had greater exposure to the radio (72%) and some had access to tap water.

The women from the "prosperous" villages were different on two scores — they usually did no work outside the house (85% were just housewives) and their husbands were often occupied in areas other than farming. While joint families existed, single families were in the majority (57%). On an average they had two or three children each.

Half of these women and their families used open fields as latrines but the rest had latrines in or near the house. Their drinking water came from wells or taps and was stored (in two out of three villages), in narrow necked containers. In Chauky (Durg) literacy was relatively high, with 3 matriculate mothers and one who was a graduate amongst our respondents. There was greater exposure to the radio (80%).

Interestingly, however, there were no real differences between these two types of women when it came to diarrhoea management. Positive attitudes to prevention, for example, or superstition were not the hallmark of any one type. Both positive and negative attitudes and practices were spread across both types.

2.2 CAUSES OF DIARRHOEAL DISEASES

2.2.1 General

The main perceived causes of "general" loose motions were teething, climatic conditions and food.

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* Singhaniwas, Nohrikalan (Shivpuri), Paldi (E. Nimar), Limoia (Durg), Bakel and Bastanar (Bastar)

2.2.1.1 *Teething*

It was almost a norm that teething would be accompanied by diarrhoea and this was accepted without question. In fact, in one village, mothers operated by the rule of the thumb that each new tooth would bring on a fresh attack of diarrhoea. It was interesting to note that while mothers strongly believed that teething caused diarrhoea, doctors rarely mentioned it. Chemists, however, had some belief in it.

2.2.1.2 *Climatic conditions*

Extreme heat or extreme cold were believed to cause diarrhoea, apparently because both these conditions made digestion difficult. Changes in the season caused diarrhoea, probably because the body had to adjust to different climatic conditions and this upset the system. Monsoon brought wetness which again caused diarrhoea. (We believe that here mothers referred to mud and slush, the child getting wet in the rain, humidity, etc.)

2.2.1.3 *Food*

Food *per se* was the third major perceived cause of diarrhoea. Stale food, unclean food, spicy food, and certain food types (gram, green vegetables) were directly associated with diarrhoeal disease. Apart from "wrong foods", even good food could cause diarrhoea, if eaten in excessive quantities.

Even amongst breastfed babies, "wrong" food eaten by the mother could result in loose motions in the baby.

Apart from these three primary causes there were other factors that could cause diarrhoea. These were illness (fever, pneumonia), lack of hygiene, and the evil eye.

Mothers did not consciously see these causes as being controllable or otherwise. Logically speaking, food should be a directly controllable variable but the residual feeling we have is that mothers more often than not felt helpless. In spite of knowing that certain types of food or lack of hygiene could cause diarrhoeal diseases, they felt they could not do much. It is possible that they were overwhelmed by work and accepted that they could not cope in all directions.

2.2.2 Causes of Specific Types of Diarrhoea

Relationships between all types of diarrhoea and their causes were not very sharply drawn. However, blood dysentery and green diarrhoea were attributed to specific reasons. Blood dysentery was seen to be caused by sugar or *gur*, by heat and weakness. An interesting link here is that in the Indian tradition, sugar and *gur* are believed to be heat-producing food items. Thus, when respondents spoke of heat, it could have been an unstated reference to both internal body heat and climatic heat.

Green motions were caused by food (green vegetables and certain kinds of "wrong" food) and by climatic conditions. Some believed that green motions were caused by heat, others believed that the cold season caused green motions.

Overeating could cause "thin motions" and "mucus" motions, stale food could cause "normal loose motions", while teething caused "yellow loose motions".

These remarks were casual, made in passing, and did not carry conviction or even great interest. These cause and effect links were hypotheses rather than beliefs. The exception was with regard to blood dysentery where the causes were believed in more firmly. It is possible that greater concern over this type of dysentery had led to more interest in the causes.

2.3 ATTITUDES TOWARDS PREVENTION AND CURE

2.3.1 Prevention

Only a few groups of housewives discussed prevention. There were two different ways of looking at prevention.

In one region (Shivpuri, where the respondents were illiterate, unexposed to the outside world, wives of farmers, labourers, etc.) the attitude was distinctly apathetic and fatalistic ("If it has to be, it has to be." "Cannot be prevented; nothing can be done"). Not only did the mothers not know if prevention was possible, they were not particularly concerned either. It would appear that diarrhoeal diseases were seen as inevitable and non-serious and therefore did not cause much concern.

Interestingly enough, these same women had stated that diarrhoea could, at worst, cause weakness. Death was not seen to be a consequence of diarrhoea. The lack of concern could be attributed to this to some extent.

In other regions, those who did discuss prevention (not many did), had more positive attitudes. The main preventive measures mentioned were:

Cleanliness of food (keeping it covered);
Cleanliness of children;
proper clothing and protection in winter; and
avoidance of excessive feeding, especially in summer.

2.3.2 Cure

Respondents claimed to rely on doctors to a large extent to cure diarrhoeal diseases. It is possible that this claim was made in order to appear to be "modern or urbanized" in the eyes of the interviewer. This doubt arises because when the same women were later questioned on home remedies, a fair range of remedies was discussed (Section 2.8)

Home treatment consisted of traditional herbal remedies on the one hand, and superstition on the other. There were local "godmen" or "godwomen" *(mata)* in whom villagers had faith; there was belief in the need to remove the "evil eye"; there was also a belief in the curative properties of opium *(afeem)*.

Barring one region, women in the other regions did believe that diarrhoeal diseases could result in death. However, this did not seem to be an active fear. It was an awareness rather than an anxiety. This leads us to believe that diarrhoeal diseases were seen as being inherently curable; alternatively, if and when death did occur, it might not always have been linked to diarrhoea, but to other aspects such as weakness, fever, etc.

2.4 TYPES OF DIARRHOEAL DISEASE

The first cue on the basis of which diarrhoea type was determined was the visual cue, namely the "looks" or "appearance" of the loose motions. Other cues were pain, smell, frequency, etc.

The mother appeared to classify diarrhoea loosely into two types—routine loose motions and non-routine loose motions.

Rouline: Yellow *(peele dast)* and green *(hare dast)* loose motions which were classified as routine because their colour, frequency and loose consistency, did not really cause much concern. Teething dast was also considered routine. In fact, teething *dast* had symptoms that would normally have caused concern (white colour, watery, seed-like consistency) but the presence of teething rendered the same symptoms less serious.

Non-routine : Variations from the basic type of loose motions (i.e., loose, frequent, green or yellow coloured motions) were recognized as "abnormal" and caused some concern.

These variations could be as follows:

Watery (panni jaise) : In the local parlance loose motions could be "like water", which would be different from motions that were just thin or loose.

Bloody (khoon ke dast) : The presence of blood certainly caused concern. It was not clear whether the concern was because blood indicated a more acute form of diarrhoea or whether blood loss *per se* caused concern. It was probably a combination of the two.

Milky/White : This type was sometimes associated with teething; if accompanied by fever it could cause concern.

Greasy : Motions described as sticky, greasy and mucus, were seen as non-routine loose motions but apparently greasiness *per se* did not create much anxiety.

Other characteristics that loose motions could have were:

a curdled texture *(phatti-tooti);*
a foamy, creamy texture;
presence of worms.

All the above characteristics belonged to loose motions or *dast* and *tattiyan.* There were diarrhoeal diseases that were not just *dast* but were called by a different name. They were:

Audasta—characterized by a lot of pain and white motions at first, followed by blood;
Pus (*mardo*);
Cramps (*Aav*);
Cholera *(Haiza)*—characterized by giddiness, heat in the stomach, and reddening of the body.

2.5 SYMPTOMS AND DESCRIPTION

2.5.1 Basic Symptoms

2.5.1.1 *Frequency*

Generally, 4 to 6 incidences of loose motions in a day were taken as an indication of *dast.*

Some respondents described frequent as being 15-20 times a day, while others did not put any number to it at all but just depended on the feel that there had been too many motions in the day.

2.5.1.2 *Appearance*

As discussed in the earlier section, there was a range of visual cues indicating the incidence of diarrhoeal disease and, sometimes, its gravity. In discussing symptoms again, respondents referred to these visual cues. The main symptoms, other than frequent motions, were:

change in colour — green, yellow, milky;
change in texture—thin, watery, foamy, curdled possibly with blood, greasy, etc.

2.5.2 Additional Symptoms

2.5.2.1 *Pain*

Stomach ache preceding and/or accompanying the loose motions was often, though not always, mentioned. The presence of stomach pain generally meant a stomach problem which could be diarrhoeal in nature. All diarrhoeal problems, however, were not necessarily accompanied by pain in the stomach.

2.5.2.2 *Smell*

As with pain, foul smell could be a result of a diarrhoeal problem, though bad smell did not necessarily have to be always present.

2.5.2.3 *Fever, vomiting*

These were associated with a more serious level of diarrhoeal disease. However, it must be stated here that neither of these was widely mentioned.

2.5.2.4 *Urine*

Sometimes spontaneous, but usually in reply to specific questions on urine, most mothers mentioned that the quantum of urine passed got reduced and that urine took on a dark yellow colour.

2.6 CONSEQUENCES OF DIARRHOEA

Effects of diarrhoea were seen in physical and behavioural terms.

2.6.1 Physical

The most frequently mentioned effect of diarrhoea was "weakness".

Related to weakness or resulting from it were other physical traits. Mothers believed that the children looked "thin" and "pale". Limbs became limp and there could be pain in the legs, and difficulty in walking. A swollen stomach, foul breath, distortion of facial muscles, and shivering were other effects mentioned. The child also lost his appetite.

In addition, there was a set of physical effects mentioned which are all symptoms of dehydration but were not recognized as such. Prominent amongst these was the skin which turned "soft", "loose", "dry" and could "tear" and "crack". Secondly, the mouth and lips were seen to turn dry. Thirdly, the eyes could take on a sunken appearance.

It is interesting that while respondents often understood that diarrhoea resulted in water draining out of the body (for which there was a term used, *sukha*) the above signs were not understood to be symptoms of that water loss.

2.6.2 Behavioural

Two apparently contradictory behavioural patterns co-existed— irritability and lassitude. These two traits were reported across all villages and therefore appeared to be constant.

Irritability was also expressed as, "is cranky", "cries often", "fights with others", though the word irritable was used most frequently.

Lassitude took various forms such as "remains quiet", "depressed", "listless", "lazy", and "still".

In addition, mothers spoke of the child remaining sleepy, wanting to lie down. Others spoke of the child being "scared" and "restless".

2.6.3 Dehydration

Upon being asked, mothers in one village spoke of water loss being a consequence of diarrhoea. A few others in a couple of villages spontaneously mentioned that watery motions led to water decreasing from the body. In one village there was a mention of *sukha* (literally: dryness, drought) that set in because of water loss, which could lead to death.

None of the other mothers, however, connected water loss with death. Some recognized water loss and were aware that diarrhoea could lead to death, but they had apparently not made the vital link in their minds between water loss and death.

An interesting point of view mentioned in one village was that "blood turns into water and this water is lost, therefore blood is lost and therefore there is blood shortage", which would explain (to the mother) the resultant weakness and listlessness.

The important point to be noted here is that the mother felt the need to go through a convoluted process of reasoning to explain diarrhoeal weakness (and possibly death). This could be because the idea of water loss *per se* having such grave consequences might have sounded incredible or far-fetched. When associated with blood loss, however, it became credible. By the same logic, blood in motions caused anxiety because blood loss could reasonably be expected to cause weakness and even death. The message implicit in this observation is that, in the diarrhoea communication programme, credibility problems regarding the intrinsic seriousness of water loss would have to be kept in mind and tackled.

2.7 FEEDING PRACTICES

2.7.1 Normal Diet

Normal diet comprised two staples, wheat and rice, accompanied by *dal* (pulses) and vegetables. Wheat was normally made into *rotis* (unleavened baked wheat bread).

It appears that children, at least, would normally be given *ghee* rubbed on rotis.

Rice would be boiled and eaten along with pulses. The commonly used pulses were *moong dal, tuvar dal* and *masoor dal.* Certain other dried pulses such as dried peas, gram, black gram, etc., were also used.

Vegetables seemed to comprise potatoes on the one hand and green leafy vegetables on the other. The latter would include spinach leaves, mustard leaves, and a variety of other leaves.

Snacks seemed to comprise biscuits and *murmura* (puffed rice). These were again more often offered to children than to adults.

Milk was used for children. However, tea drinking seemed to be a more common practice amongst all age groups.

The fruits mentioned were *papita* (papaya), apples, mangoes, and oranges.

2.7.2 Feeding during Diarrhoea

2.7.2.1 *Neonates*

Most mothers believed quite emphatically that breastfeeding should continue during the period in which a child had diarrhoea. The main reason for this belief was the awareness that an infant was entirely dependent on breast milk for sustenance.

One condition was laid down which was that a mother should control her diet. The rules were that she should eat easy-to-digest, non-spicy, non-oily foods.

There were a few dissidents on this issue of breastfeeding an infant who had diarrhoea. However, the dissent was more in theory than in practice. In fact, mothers who believed that breastfeeding should be stopped did not actually do so, primarily because of the absolute dependence of the child on breast milk. A small minority claimed to stop or reduce breast milk and substitute it with cow's milk.

We conclude from the above observations that mothers clearly believed in the continuation of food or sustenance through diarrhoea.

2.7.2.2 *Older children*

There was a wide variety and range in the food mentioned in this context. Within this variety, a pattern emerged if seen in the context of Indian food beliefs.

To begin with, some kinds of food were common to almost all villages. These comprised two staples — rice and dal (pulses). They were either given singly or cooked singly but given together or cooked together in the form of *khichri*. The other item commonly given in almost all villages was tea.

Other than these, the food items varied. However, there was an unspoken thread of reason stringing these together. The foods could be classified as follows:

Very light and easy to digest : Almost all mothers instinctively swung towards food that are traditionally believed to be very light and easy to digest. These are rice, *dal* (particularly *moong dal*), *khichri* (mentioned above) curds, curd and rice ("cools the system and stops blood dysentery) *murmura* (puffed rice) milk and lemon (presumably cottage cheese and/or whey) and *matha* (thick, beaten curds).

Easy to digest : These were food that are traditionally believed to be "heavier" than those in the category given above.*

They were not "light", but were still considered easy to digest. These were *roti* without *ghee*, biscuits, *jowar roti*, vegetables, *dalia* (a type of porridge made

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* "Heavy" foods are those that give a full, heavy feeling even after consumption of small quantities and depress the appetite for several hours thereafter, which creates the feeling that they are difficult to digest. Light food can be consumed in larger qantities and yet these allow renewed appetite in a few hours.

of broken wheat), and *sabudana kheer* (a sweet dish made from milk and sago). Some items were not allowed such as chillies, oily food, spices and sour food, certain *dals* that were believed to be heavy.

Liquids : In almost all villages, there was clearly a practice of giving liquids during diarrhoea. There was a comprehension that water replacement was required. In one village this was stated as: "More water is required because the tongue dries up." While others did not express themselves as clearly, the practice of giving liquids along with the earlier observation of (unrecognized) dehydration symptoms leads to the conclusion that at an instinctive level the link between diarrhoea–dehydration- rehydration was understood.

The most commonly mentioned liquid was tea. (possibly also the most commonly consumed liquid under normal conditions by the whole family), followed by water (with or without glucose). Attitudes to milk differed. In most villages milk during diarrhoea was considered taboo ("milk increases *dast* because it increases heat").

Tea was usually given in the normal form. There were, however, some variations. Some gave tea without milk, some others spoke of tea with lemon; in one case mothers spoke of adding opium to tea.

Buttermilk, *moong dal* water, water with glucose, and plain water were also given.

Special items : One item mentioned in a few villages was *ber ka murrabba* (jam made from berries of a certain type); there was no explanation as to the effect of this item on diarrhoea. In one group there was mention of alcohol, given in drops, to help control diarrhoea.

2.7.3 Post-diarrhoeal Feeding

The normal practice seemed to be to bring children on the normal diet within a day or two of the diarrhoeal problem being brought under control ("when loose motions stop").

It appears that there would be at least one day of "cautionary diet" before normal diet was restored. This cautionary diet could: (a) comprise the same *khichri, daliya,* and curd-rice given during diarrhoea or (b) have a slightly different complexion in the form of reverting to normal food but with less chillies and/or in a lesser quantity.

In a couple of days, after cure the diet returned to the absolutely normal. This included *dal,* rice, *roti,* milk and milk tea, sugar or jaggery, vegetables, biscuits, etc. There was only one mention of a special diet being given called *sev-jal.* This (we believe) is a kind of jam since respondents used it by spreading it on *rotis.* It was believed to be good for health and for increasing the blood in the body.

However, this was the only mention of any special health supplement being given. Nor was there any mention of increasing the quantity of diet. If anything, mothers proceeded cautiously with smaller quantities and moved on to normal quantities. It can be concluded therefore that the concept of health needing to be reinforced after diarrhoea did not exist.

2.8 TREATMENT

2.8.1 Traditional

Traditional remedies had a primarily herbal basis. Each village seemed to have different local herbs and leaves so that, barring a couple of exceptions, there was almost no duplication in the remedies adopted. The only common

factor was that they were mostly based on locally available herbs and leaves. In addition, there were a few non-herbal remedies.

2.8.1.1 *Herbal*

Several herbs and leaves were used. The following is a list of the items mentioned:

Suhaaga	Borax
Jaiphal	Nutmeg
Pudina	Mint
Khus Khus	Poppy seeds (deopiated)
Patasa	Sugar
Billi Patra	A three-leaved set of the wood apple tree used in religious ceremonies
Madhu	Honey
Heeng	Asafoetida
Methi	Fenugreek

Other than these, several respondents first mentioned "herbs and leaves" but could not specifically name them.

These herbal items were used in several ways—some were ground to a paste, some were rubbed and mixed in milk, some were burnt and consumed, and so on.

Interestingly, there was no mention of the efficacy of these remedies. It is possible that they were used simply because it was the traditional custom to do so rather than because they had been proved to be efficient.

2.8.1.2 *Non-herbal*

Opium was used in one region, but was hardly mentioned in the other regions. The region where opium usage came through with some strength comprised poor, illiterate women who were wives of farmers and labourers. This is only an observation; it would not be possible to come to any conclusions on this basis. However, it could be said that opium use appeared to be restricted to one geographical region where the people also happened to be poor and illiterate.

As with opium, the use of other non-herbal local remedies also had regional overtones. Thus, *be-ka-murrabba* was used in the central Madhya Pradesh regions. Belief in the "evil eye" was more prevalent in western Madhya Pradesh than elsewhere. Dependence on local godmen was found only in eastern Madhya Pradesh.

It would appear therefore that there were strong regional influences that determined the types of traditional medicines used. As mentioned earlier, respondents claimed to immediately turn to medical practitioners. However, the detailed discussions on herbal and non-herbal remedies did indicate an initial dependence on home remedies.

2.8.2 Medical Treatment

Medical treatment was usually sought when the diarrhoeal problem persisted for a few days or showed signs of worsening. Some respondents claimed to wait for two or three days before approaching a doctor; others waited for five to six days. (On the other hand, doctors and chemists claimed that parents did not bring in a child till it was almost too late.)

Treatment, according to mothers, comprised medicines, tablets, injections and "powder". By powder, respondents could have meant either a powdered mixture of medicines or oral rehydration salts. The latter was specified in a few cases as "white powder in a packet".

There appeared to be faith in the efficacy of medical treatment. Respondents felt that it did help stop loose motions and blood in the case of "khoon ke dast" (dysentery). The child also became active and started playing.

2.9 REHYDRATION

2.9.1 Sugar and Salt Solutions

In three regions out of the four covered in Madhya Pradesh, there was a glimmering of awareness of a water-based solution to be given during diarrhoea.

The closest to the truth was a region (Shivpuri) where mothers knew of a sugar salt solution but had incorrect knowledge of the formula. They spoke of a pinch each of sugar and salt to a small quantity of water (ranging from a teaspoon to a small glass). This was in spite of the fact that government efforts regarding oral rehydration had reached this region and posters regarding home made sugar salt solution in the local language were found here.

In two other regions there was an awareness and use of glucose powder mixed with water. Some respondents also spoke of fresh lime, water, and sugar solution.

Finally, in one region*, there was no awareness at all of either salt and sugar solution or of any other form of rehydration solution such as lime water or glucose water. Interestingly, in this region, even doctors had no knowledge of home made sugar salt solutions.

2.9.2 Oral Rehydration Salts

Unlike home made sugar salt solutions, there was widespread awareness of a "powder" that came in "a white/ blue/ orange/ green pack" which was "to be mixed in water" (quantities and ratios varied) and given to a child with diarrhoea.

As mentioned, the powder was primarily recognized by the pack colour. In fact, only one respondent knew the name Electral.

While respondents did not know the actual contents of the pack they guessed that it had glucose and some fruit, probably orange. This guess was based on the flavour and smell of the prepared drink.

Methods of preparation varied. Usually, approximately 1/2 glass of water was used (about 100 ml). The quantity of powder added could vary from 1/2 teaspoon to 2 tablespoons. The usual range seemed to be within 1 to 2 teaspoons powder to $\frac{1}{2}$ glass of water.

The frequency of administration varied. Some believed in giving a controlled 2-4 times a day while others gave it whenever the child felt thirsty.

Those who had used it had found it effective in that the child had recovered. It appears that respondents attributed curative properties to ORS. Those who had never tried ORS, expressed their willingness to do so "if told by the doctor".

Unlike traditional remedies and salt and sugar solution, the awareness of ORS existed across all regions, albeit in varying degrees of accuracy.

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* Jagdalpur - Bastar district.

3. HEALTH PRACTITIONERS

3.1 RESPONDENT PROFILE

Three categories of health practitioners were interviewed.

3.1.1 Frontline Workers

These comprised medical practitioners appointed by the government who operated at the village level, though were not necessarily based there. Most of them had received only very basic training. We had health supervisors, one lady health visitor, one Jan Swastha Rakshak from a primary health centre and several nurses.

3.1.2 Village Doctors

The village doctors comprised those who had received some formal training and those who had not in equal numbers. Amongst the trained, none had an MBBS degree, but they had other types of formal medical training or were still undergoing training.

At the non-trained level was quite a motley collection of practitioners. We had one *ojha* (witch doctor) who had practised magic for 50 years (claimed), one who had trained at home by watching his brother practice, one *dai* (midwife), and one who had many years of experience but only some formal training.

3.1.3 Town Doctors

Almost all town doctors had an MBBS to their name. Some had additional qualifications (allopathic or homoeopathic), whereas others had many years of experience.

3.2 CAUSES OF DIARRHOEA

3.2.1 General

3.2.1.1 *Food*

Food was the single largest cause of diarrhoeal diseases according to medical practitioners.

Almost all mentioned stale, dirty, spoilt food as a major cause. However, village doctors spoke of food as the single largest cause of diarrhoeal diseases. They felt that apart from stale food, certain food types such as oily food, spicy food, excessive food, the faulty diet of a breastfeeding mother, all contributed to diarrhoeal diseases.

Frontline workers also felt that faulty food and faulty eating habits (food types and quantities) were an important cause of diarrhoeal disease.

By contrast, town doctors laid relatively less emphasis on food, though they did list it as an important cause. Apart from stale food and wrong food (spicy, oily) town doctors also mentioned milk (stale, contaminated, unboiled) as a source. This had been neglected by all others.

3.2.1.2 *Seasonal factors*

Change of season, excessive cold and excessive heat were mentioned relatively more by village doctors and frontline workers than by town doctors.

3.2.1.3 *Lack of hygiene*

Interestingly, only one village doctor listed this as a cause of diarrhoea. By contrast, frontline workers paid more attention to this factor, mentioning both lack of personal and general hygiene and the use of dirty, polluted water. Finally, town doctors listed dirty/polluted water high up on their list of causes. In fact, a large number of them listed faulty water as the first cause of diarrhoeal diseases, followed by a general lack of hygiene—personal, in the surroundings and in day-to-day living habits.

This difference in emphasis is interesting since it reveals the extreme ignorance that the average mother is likely to have in this regard. As we have seen, mothers mentioned lack of hygiene in passing but looked upon it with helplessness. Those who can immediately influence them (village doctors) do not seem to look upon lack of hygiene as an important factor. (As we shall see, village doctors had little to say regarding prevention. Only one village doctor mentioned cleanliness. By contrast, a large number of FLWs and town doctors mentioned cleanliness and consumption of boiled water as basic preventive measures). Since the attitudes and knowledge of village doctors on hygiene and clean water is substandard, given their profession, and since they are likely to be the most direct influencers, mothers also tend not to realize the importance of the same.

3.2.1.4 *Other causes*

Some doctors felt that medicines were not available as needed and this could result in infections setting in or diarrhoeal diseases resulting from other untreated problems. Alternatively, excessive medication, especially antibiotics, were believed to result in loose motions.

Teething was mentioned only by one town doctor (in contrast to almost every mother who saw a direct link between the two). Other causes mentioned in passing were ghosts, alcohol (not explained), infection, and food poisoning (which could cause both vomiting and loose motions).

3.2.2 Type Specific

A few types of diarrhoea were discussed as having specific causes.

Green diarrhoea was believed to have various causes. Green vegetables, monsoon and winter, and indigestion were all blamed for green diarrhoea.

Other types and causes were mentioned only in the passing:

mucus diarrhoea was attributed to lack of hygiene by a frontline worker, and to amoebic infection by a town doctor;
one village doctor felt that vomiting caused cholera;
watery diarrhoea was attributed to bacterial infection and impure water by one town doctor;

frequent motions could cause worms, according to an FLW; yellow motions could be caused by indigestion.

One village doctor clearly mentioned that villagers wrongly attributed diarrhoea to teething and therefore neglected it, which he believed was a mistake.

3.3 ATTITUDE TOWARDS PREVENTION AND CURE

3.3.1 Prevention

As expected, town doctors and frontline workers had clearer ideas on prevention than village doctors. In a couple of regions, village doctors had nothing to say about prevention. A few others admitted to knowing nothing about prevention.

Frontline workers and town doctors laid great stress on the use of boiled drinking water as a primary preventive measure.

Cleanliness of the child and of the surroundings was mentioned by all groups, including town doctors. They also spoke of the need to sterilize feeding bottles and nipples for the bottlefed child. Food was the third major area in the prevention of diarrhoeal diseases. Each group mentioned the importance of clean and fresh food; however town doctors also laid emphasis on a balanced diet and proper nourishment.

3.3.2 Cure

Respondents were questioned about the ways of curing diarrhoea and/or dehydration. In response to this, frontline workers and town doctors and a couple of village doctors spoke of ORS and sugar salt solution, mainly the former. ORS was referred to as "the rehydration powder", "the powder in the green pack" or by the brand name Electral. Boiled water was also recommended by a few doctors.

Village doctors believed in intravenous saline administration to counteract dehydration; their awareness of the need for immediate and continuous rehydration was low. They appeared to be concentrating on stopping the loose motions to ensure recovery; rehydration seemed to be associated with an advanced stage of the disease.

It is intriguing to note that while doctors seemed to be alert to the need for ORS and sugar salt solution, this information had not been transmitted to or absorbed by the mothers. There was a disparity in awareness levels of rehydration between mothers and medical practitioners in the same regions or villages.

It is also interesting to note that there was considerable disparity even amongst medical practitioners with regard to rehydration awareness. FLWs and town doctors were clearly more aware of ORS and sugar salt solution than village doctors.

There clearly seems to be a communication gap between the informed and those who need to be informed, i.e., those who first treat the child, namely, mothers and village doctors. It is difficult to explain the reason for the gap. However, it is a vital one and needs to be bridged urgently.

3.4 TYPES OF DIARRHOEAL DISEASES

3.4.1 Classification

Medical practitioners referred to diarrhoeal diseases in general as loose motions. However, they also listed various diarrhoeal diseases. The most prominent amongst them were as follows:

3.4.1.1 *Dysentery*

Dysentery was characterized by greater frequency of loose motions, sometimes white, sometimes foamy, sometimes with blood. Some referred to loose motions with blood as dysentery; others said that watery motions with mucus were a sign of dysentery. Others divided dysentery into two types — bacillary (with blood), and amoebic (with mucus).

3.4.1.2 *Watery loose motions (kafal)*

This appeared to be a common form of loose motions. It could be accompanied by foam, by mucus, by stool particles *(phate-toote)*.

3.4.1.3 *Yellow motions*

Medical practitioners seemed to consider this type of yellow and loose motions as being common *(aam dast)* and did not get too exercised over it.

3.4.1.4 *Green motions*

Also referred to as *stageri* by one doctor, its associations were varied. Green motions were connected with breastfed children, with bile pigments, with dysentery and with winter. Though not as common as yellow motions, green motions appeared to be common enough to not cause much concern.

3.4.1.5 *Blue motions*

Not mentioned by any of the mothers, these were mentioned in two regions. They seemed to be serious since they were associated with water-like motions, blood and pus.

3.4.1.6 *Cholera (haija)*

Cholera was described as white stools accompanied by vomiting. However, there was little mention of cholera in these regions. It can be assumed therefore that the occurrence of cholera must have been infrequent in the district covered by us.

3.4.2 Gravity

Except for the village doctors in one region, all others believed that diarrhoea could lead to death.

Town doctors felt that diarrhoeal diseases were serious and could result in death on two counts:

(a) Diarrhoeal diseases resulted in dehydration, which could be fatal.
(b) Parents only brought in children for treatment when it was almost too late. Lack of timely attention made a case worse than it need have been.

Some frontline workers and one village doctor also mentioned the gravity of dehydration and its potentially fatal nature. However, by and large, the

village doctors and frontline workers did not look upon dehydration with much anxiety. They attributed death from diarrhoeal diseases to weakness, bleeding, lack of treatment, or failure of treatment.

3.5 DESCRIPTION AND SYMPTOMS OF DIARRHOEA

The main symptoms of diarrhoea were:

Loose motions : Thin, watery or just loose motions were an indication of diarrhoea. Many medical practitioners, however, qualified loose motions with other signs such as blood, pus, sticky consistency, green or yellow colour and foul smell.

Frequency : Often referred to as just "frequent" loose motions, those who did quantify usually spoke of more than five loose motions in a day.

Stomach ache : This was the third symptom that almost all medical practitioners looked for. Some spoke of acute pain; others referred to cramps; all expected diarrhoea to be accompanied by pain in the stomach.

Dehydration : Sookhi or lack of water was directly mentioned in a few cases. Others spoke of symptoms that occurred as a result of dehydration such as thirst, loose skin, less urine, and sunken eyes. Village doctors of only one region referred to dehydration-related symptoms. Those from other regions made no mention of them.

Fever : Fever was mentioned as a symptom of diarrhoeal disease across all practitioner types, more so amongst town doctors and FLWs.

Other symptoms mentioned by some practitioners were:

weakness and giddiness
vomiting; and
restlessness.

3.5.1 Type-specific Symptoms

The few type specific details that were available came almost entirely from town doctors. Even these were mostly random observations.

Normal diarrhoea, for example, was associated with a foul smell and a frequency that was not very high.

Dysentery, on the other hand, was characterized by motions that had less smell but far greater frequency. Amoebic dysentery could be recognized by the presence of blood in addition to other characteristics.

3.6 CONSEQUENCES OF DIARRHOEA

3.6.1 Physical

The most widely mentioned consequence of diarrhoea was weakness. A child became weak and lean and pale; its limbs became limp. Often, the child would lie inert and in a semi-conscious state. It could have a low pulse and be cold to touch.

Apart from weakness, the other most commonly mentioned physical effects of a diarrhoeal attack were sunken eyes, dryness of the skin, mouth, and tongue. While stray mentions were made of liver, brain, and eye damage, long-term health problems were not seriously considered as the consequences of diarrhoea.

Dehydration symptoms were recognized as results of diarrhoea and will be discussed shortly.

3.6.2 Behavioural

Changes in the child's behaviour resulting from diarrhoea were widely observed. On this issue, medical observations tallied with the maternal ones. Behaviour was of two types.

Listless : The child was described as becoming lethargic, quiet, sleepy, and disinterested in his surroundings.

Irritable : Irritability and restlessness were the other aspect of behaviour in a child suffering from diarrhoea.

3.6.3 Dehydration

Dehydration was seen in the form of a dry mouth (tongue, lips), dry skin, reduction or cessation of urine, and increased thirst.

Village doctors did not usually refer to these effects. If they did so at all, the signs did not relate to water loss and dehydration. They either saw these as just physical effects of diarrhoea or attributed different reasons for the same, such as acidity or blood loss. There were a couple of exceptions to this, including the witch doctor who clearly said that *sookha* would cause death.

Frontline workers differed in their understanding of the problem; some understood water loss and recognized signs of dehydration; others did not connect the symptoms with water loss.

Town doctors by and large were well aware of dehydration, its causes, and effects. In fact, detailed signs of dehydration such as wrinkled, non-elastic skin and sunken fontanelle were only mentioned by town doctors.

3.7 FEEDING DURING DIARRHOEA

3.7.1 Neonates

Medical practitioners were almost equally divided in their views on breastfeeding an infant suffering from diarrhoea. On this issue, town doctors and village doctors joined hands by leaning in favour of continuing breast-milk. Frontline workers were either opposed to or grudgingly permitted breastfeeding.

Village doctors (those who spoke on this subject) believed that mother's milk was harmless as long as the mother controlled her diet. Since it was the child's source of nourishment, it was necessary to continue breastfeeding the child.

Town doctors largely believed in continuing breastfeeding during diarrhoea. In fact, they did not add any proviso regarding diet control by the mother. A few complained that mothers stopped breastfeeding despite their advice to the contrary (mothers, however, had clearly shown their belief in continuing breastfeeding (2.7.2.1)

There were a couple of frontline workers who believed that breast milk should be continued. Of these, one specified that mother's milk was best during diarrhoea since it was sterile and clean and therefore safest under the circumstances.

On the other hand most frontline workers seemed to be clearly opposed to breastfeeding during diarrhoea. Some believed that it was too heavy for

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the child to digest; others believed that it did more harm than good and recommended that breastfeeding be stopped even if the child was totally dependent on it. A few were not rigid in their views and allowed that a totally dependent infant could be breastfed, if necessary.

Town doctors also recommended that breastfeeding be stopped in a few cases such as acute diarrhoea or the mother being ill.

Biscuits, curd, and whey were recommended as stop gap substitutes for breast milk.

3.7.2 Older Children

Views on feeding older children were more or less common amongst all medical practitioners.

Most practitioners favoured a light, easily digestible diet. All agreed on a few basics.

3.7.2.1 *Solid or semi-solid food*

These were rice, curd and rice, *khichri* (a combination of rice and 'dal', often gruelly) curd, buttermilk, whey, and fruits (particularly bananas). Village doctors seemed to veer towards a low cereal diet since they mentioned curd, whey, fruits, etc., whereas town doctors were more inclined towards cereals (rice, *dal, khichri*). However, some items were conspicously absent such as roti, bread, vegetables (barring one or two exceptions).

Other items mentioned as being right for a child suffering from diarrhoea, were *dalia* (broken wheat porridge), sago (again, in porridge form), oranges, apples and *pej*.

3.7.2.2 *Fluids*

There was direct or indirect emphasis on the use of fluids in a diarrhoeal child's diet. In one region, medical practitioners merely recommended buttermilk, whey, and gruelly *khichri* but did not stress fluids. There was, however, an unstated understanding of the need for fluids as is apparent from the recommended diet.

Practitioners from all other regions however stated quite clearly that the fluid intake had to be increased. Some explained that lost fluids had to be replaced and therefore the diet should include "lots of boiled water".

Others "just stressed the need for various liquids such as rice water, lime juice, barley water, buttermilk" (FLW), and "glucose powder in hot water" (village doctor).

Finally, in one region, the emphasis was not so much on including fluids in the diet as on an essentially liquid diet. Medical practitioners here allowed "rice with more water" and "diluted *khichri*", curd or rice and bananas. Their stress was on liquids such as fruit juice, *dal* soup, rice soup, buttermilk, coconut water and boiled water.

3.7.2.3 *Quantities*

On the whole, medical practitioners seemed to favour an overall reduction in the quantity of food consumed, presumably to decrease the burden on the digestive system. There were a few exceptions to this school of thought, who felt that a child should be fed as much as he demanded. Another opinion was that quantities should be decreased but the number of meals should be increased so that the overall quantity of food remained the same

as normal.

However, the majority view favoured decreased food quantities.

3.7.2.4 *Banned food*

Here the emphasis was on avoiding food that was heavy or difficult to digest. In this category were *roti*, vegetables, fried or oily foods.

The other forbidden food type was spicy food especially that which contained chillies.

Milk was forbidden by some of the practitioners from each category.

Finally, some stray food items mentioned by a few practitioners were sugar and jaggery, peanuts, and *jamun.*

3.7.3 Post Diarrhoeal Feeding

Almost all medical practitioners were in agreement on this issue.

The general belief seemed to be:

> to continue light diet for a few days (3-5) after loose motions came under control, keeping it bland and easy to digest; and
> to slowly introduce normal diet.

There were only a couple of practitioners who felt that the child should be given more and better food after recovery to help it regain energy and improve resistance. The majority did not speak of increasing quantities or of the child's depleted health and energy. This indicates again, that the emphasis was on control of loose motions rather than on the overall health of the child. It was assumed that once the problem was solved, normal health would return.

3.8 TREATMENT

3.8.1 Traditional Remedies

A few interesting findings emerged here. Village doctors had surprisingly little to say on traditional remedies. Those who did speak on the subject mentioned dietary items such as curd and rice, fruits, buttermilk, but made no mention of traditional herbs and other medicines.

Be-ka-murrabba, mentioned by mothers, was mentioned by one village doctor from the same region. The witch doctor, predictably, spoke of the need to drive away ghosts by "scolding and shouting".

Barring these two, village doctors appeared to know little about traditional remedies, which is difficult to believe. It is possible that they preferred to conceal their knowledge in order to appear more scientific.

Town doctors on the other hand, seemed to "err" on the other side. There was greater mention of "driving away ghosts", "talismans" and of opium use by mothers from town doctors. The attitude of some of them appeared to be comptemptous; others seemed sorry and helpless. They spoke of parents neglecting diarrhoeal diseases, either because they attributed it to teething or because they believed it to be a manifestation of *mata*'s (Goddess) anger. Others mentioned that mothers resorted to ayurvedic and herbal treatment but were not clear about the details. *Chiraita*, nutmeg, *khus-khus* and *murakhia* were a few herbal items mentioned by them.

Frontline workers fell between the town and the village doctor in their attitude to traditional remedies. They mentioned certain traditional remedies such as juice of mint leaves, juice of bamboo leaves, *isabgol* and certain herbs. They also spoke of dietary items such as buttermilk and *dal* soup.

Frontline workers in one region spoke of home made sugar salt solution as a home cure. It is interesting to note that mothers in this same region had been totally unaware of home made sugar salt solution. Once again, this reveals a communication gap in the system.

FLWs mentioned opium use in a few regions, which tallied with the mothers' claim.

3.8.2 Medicinal Cures

Doctors spoke of a wide range of medicines used to cure diarrhoeal diseases. Town doctors claimed to analyse the cause, such as whether the infection was bacterial or amoebic, caused by impure water or by cold, etc., and said that they administered medicines accordingly. Chlorostrep and Sulphdiazine were mentioned somewhat more often by FLWs, town doctors and even by village doctors than other medicines.

Next in order of frequency were Enterovioform and Mexaform. Kaolin-Pectin suspension and Streptomycin.

A few practitioners spoke of administering drugs such as APC, Analgin, Baralgan and Quinine for treatment of diarrhoeal diseases.

Oral rehydration salts were mentioned as part of medical treatment by a few doctors, as also saline drips and injections.

3.9 REHYDRATION

3.9.1 ORS

Awareness: There was awareness and use of oral rehydration salts amongst all medical practitioners interviewed in this state. Some knew of Electral: others spoke of just "the powder" or "the white packet" or "the blue packet". However, all had heard of it (except the witch doctor who had never seen an ORS pack) and most had used it or recommended it.

Use: Doctors usually seemed to prescribe a pack for the patient to buy if they felt the patient could afford it. Frontline workers, on the other hand, followed the practice of opening up ORS packs and distributing required quantities of powder or even mixing powder in water and administering it to patients.

Views on the frequency of consumption were somewhat similar, varying from 4-5 times a day, to as often as possible.

Contents: Doctors (town and a few village) said that ORS contained sodium, potassium, glucose, and calcium. A few felt it also contained fruit juice. Frontline workers were relatively ill-informed on the subject. One ventured to guess that it contained vitamins but that appeared to be all.

Formula: The powder water ratio used differed from practitioner to practitioner. Some used one pack of ORS to one litre of water, others used 1 teaspoon to one glass of water. The rest fell between these two with 2, 3 or 4 teaspoons to a glass of water.

There was only one person (village doctor) who spoke of less than one glass of water. His formula was 1 teaspoon to 15 ml of water. This is highlighted because it reveals that this doctor had clearly not understood

the rehydration function of ORS but seemed to expect medicinal properties from it.

Uses: Two functions were expected from ORS. One was to compensate bodily losses. Some saw ORS as compensating fluid loss, others as compensating salt loss, whereas still others felt that it compensated for sugar, calcium, and general energy losses.

The second function expected by some practitioners was that of stopping or controlling loose motions.

The only factor that was mentioned against ORS was the cost which, doctors felt, made it difficult for the average villager to afford.

3.9.2 Sugar Salt Solution

On the whole, knowledge of sugar salt solution was poor.

One region (Shivpuri) had been reached by the government, and FLWs had been trained by WHO doctors. Posters stating the "pinch of salt, fistful of sugar" formula were found here.

Frontline workers in this region were the only ones who really knew the formula. Even amongst these, one FLW had the formula wrong. It may be recalled that mothers in this area were aware of the sugar salt solution but did not have the right formula. Village doctors were not aware of the sugar salt solution and indeed one village doctor snapped with irritation at the question. Town doctors in this region were aware and claimed to have trained villagers. Their formula was 2 teaspoon sugar and a pinch of salt to one glass of water.

The reason for highlighting this region is that, in spite of the benefit of training and reminder material, there was still confusion, if not ignorance. The need is for longer and repeated training and may be direct training of mothers, since formulae get distorted at each level.

Awareness in the other regions varied. Khandwa, in south-west Madhya Pradesh, had doctors who were aware of and claimed to use the sugar salt solution. Their formulae were:

sugar and salt with boiled cooled water;
1/4 teaspoon each of salt and sugar and 1/2 lime to 250 ml water
1 teaspoon sugar and a pinch of salt to one cup boiled and cooled water.

These doctors believed that the sugar salt solution was very effective under mild diarrhoeal conditions. There was a belief that sugar would do more harm than good in an attack of dysentery.

As is apparent, there was faulty knowledge and conditional acceptance of the sugar salt solution.

This was however better than the doctors from the other two regions. Only one doctor was aware of the sugar salt solution (20 gm glucose, 1/2 teaspoon salt, 1/2 teaspoon soda, one lime) and believed in its efficacy. No other doctor had anything to say on the subject.

Frontline workers in one region spoke of the sugar salt solution but did not have the right formula.

In this state of Madhya Pradesh, one could say that there was some awareness in two of the four regions covered but that a lot of time and effort would be required before the sugar salt solution would begin getting used as a matter of course along with the onset of diarrhoeal diseases.

4. MEDICAL RETAILERS

4.1 RESPONDENT PROFILE

Most of the respondents were owners of medical shops in the base town of the region. Two respondents operated general stores from which they also sold some medicines. Less than a quarter of the respondents were graduates, though only one had pharmaceutical qualification; the rest had learnt about medicines on the job.

4.2 TYPES OF DIARRHOEAL DISEASES

Diarrhoea was the term most commonly used to refer to diarrhoeal diseases in general. The other term was dysentery.

It is not clear whether retailers knew the definitions of dysentery, diarrhoea, loose motions, etc. The absence of explanations creates the impression that there was confusion in the minds of retailers and that the terms were loosely used. In one case we were informed that dysentery plus vomiting, occurring together, would be called diarrhoea. Others just stuck to names, without details.

The Hindi words *dast* and *Aav* were also used. *Aav* was understood to be dysentery whereas *dast* was ordinary loose motions. In another region (Balod), chemists used the word *shartaja* for ordinary loose motions. This had not, however, been heard from either doctors or mothers.

Retailers in Shivpuri spoke of *sookha*. Interestingly, these were the only ones who also spoke, at a later stage, of fluid and salt loss occurring due to vomiting and loose motions. Shivpuri, it may be recalled, was the district that had received the benefit of ORS training. These retailers also mentioned amoebiasis and cholera which indicates a greater exposure to terminology, though it does not necessarily indicate more knowledge.

4.3 CAUSES OF DIARRHOEAL DISEASES

Chemists from only two regions out of the four spoke of causes. In Balod, chemists attributed diarrhoeal diseases to teething and to defective blood. Shivpuri chemists were able to discuss causes in greater detail. They too believed that teething was a major cause of diarrhoeal diseases. Other causes mentioned were amoeba-infested water, overeating and certain eating habits that they believed were faulty (for example, drinking water after eating papayas).

Cholera was believed to be caused by bacteria-infested water. This was believed to happen more often in monsoons than at other times.

4.4 SYMPTOMS

Knowledge regarding symptoms was very sketchy. Blood was seen as a symptom of dysentery (*aav*) by some, whereas the presence of mucus meant dysentery to some others.

Vomiting and loose motions occurring together were a sign of cholera according to the retailers in Shivpuri but this combination was referred to as diarrhoea by the retailers in Jagdalpur.

We have seen earlier that chemists and retailers were not able to enumerate diarrhoea types at any length. If there had been clarity in their minds regarding symptoms of diarrhoea, it would have indicated fundamental knowledge of the problem, which would have relevance for their interaction with patients. Paucity of knowledge on both counts however indicates that they could not be providing much help or guidance to patients of diarrhoeal diseases.

4.5 CONSEQUENCES OF DIARRHOEAL DISEASES

Fluid loss and its consequences were known in Shivpuri. Dehydration was associated more with cholera than with ordinary loose motions, since the combination of loose motions and vomiting led to greater fluid loss. Retailers in Shivpuri believed that if dehydration was treated at once, home treatment would be sufficient to control it. If neglected, however, the consequences of dehydration could be serious. Hospitalization and intravenous drips would be necessary, without which, or sometimes in spite of which, a patient could die.

Retailers in Balod associated dehydration with diarrhoea but believed that this was a consequence in summer rather than at other times.

None of the other retailers spoke of the consequences of diarrhoeal diseases.

4.6 ADVICE USUALLY GIVEN

Several retailers were initially on the defensive and claimed that they did not give any advice except directing patients to a doctor. Further probing revealed that some advice of a general nature was given.

4.6.1 Medicines

Usually, patients asked for chemists' opinion on a prescribed medicine or for substitutes if the prescribed brand was not available. If the problem was not serious, patients sometimes bypassed the doctor and came straight to the chemists. As several chemists admitted, they gave advice on mild attacks of diarrhoeal diseases, on coughs and colds and other minor ailments but directed patients to the doctor in case of more serious problems. In Shivpuri, chemists said that patients came in asking for good, fast acting, cheap medicines. They claimed that while they advised on safe drugs, unqualified doctors bought and used prescription drugs. Chemists concurred with medical practitioners in the belief that parents did not bring in children as soon as a diarrhoeal disease set in but waited till it became severe before asking for help.

4.6.2 Diet

Chemists and retailers advised parents to give *khichri* to children having diarrhoeal problems, to avoid milk and tea, and spicy, fried food.

4.6.3 General

General advice was given in terms of maintaining cleanliness, boiling drinking water, and giving gripe water to a teething child.

4.6.4 Rehydration

It was interesting to note that retailers in all regions claimed to advise parents on the use of the sugar salt solution or Electral powder. In three out of the four regions, retailers were aware of the sugar salt solution. Awareness and use of ORS was present in all four regions at the retailer level. We shall discuss this in detail in section 3.8.

4.7 MEDICINES STOCKED/PRESCRIBED

All outlets covered by us in these four regions stocked both allopathic and ayurvedic drugs. Ayurvedic tonics were reported to move well. Some retailers got medicines from wholesalers whereas others placed their orders directly with pharmaceutical companies. Medicine supplies were satisfactory except during peak seasons when there were more illnesses reported, particularly during summer and monsoon months. Retailers in two regions complained of unsatisfactory Mexaform supplies. One chemist explained that ever since it had been banned there had been problems getting sufficient stock.

Mexaform sales continued notwithstanding the knowledge that it could be harmful. Enterovioform was also popular amongst chemists in one region. Other popular medicines for diarrhoeal diseases were Streptomagma, Streptomycin, Chlorostrep, Enterostrep and Sulphide medicines. Certain ayurvedic medicines were also used such as Charak's Bometape Syrup for children during cholera or Diasyn ayurvedic tablets.

Finally, ORS and electrolyte powders were also prescribed.

4.8 REHYDRATION

4.8.1 Fluids Available at Home

These were only mentioned by Shivpuri retailers who advised the use of curdled milk (*paneer*) water and boiled water with glucose powder.

4.8.2 Sugar Salt Solution

Except for one region, most retailers and chemists in the other regions were aware of the sugar salt solution and some of them advised patients regarding its use. The formulae varied.

> 25 gms each of sugar and salt; water quantity not specified;
> 3 to 4 teaspoons of sugar to a glass of water and salt to taste;
> 1 teaspoon sugar and a pinch of salt to a glass of water;
> a little sugar and 3 pinches salt mixed in boiled water.

These different formulae reveal, once more, that while the basic principle seems to have been understood, proportions of sugar, salt and water tend to get distorted very easily. Communication would have to emphasize the formula in a way that can be easily remembered and that will not allow for confusion between the proportions of sugar and salt.

Some retailers understood that the sugar salt solution would help replace lost fluids and body salts. Others believed that it would reduce weakness and stop diarrhoea if administered at the mild or initial stage.

4.8.3 ORS

Electral appeared to be the best known and most widely recommended of all oral rehydration salts. (Other names mentioned were Petratol, Elaraj, Lite and Relite powders*). Retailers seemed to prefer Electral over other brands and over salt sugar solutions since it was a "selling item", meant good business, was considered to be the brand leader and was believed to be the best of all available ORS. Most retailers were aware of ORS with a couple of exceptions, who had not heard of it and did not know what it was.

By and large, retailers believed that ORS reduced weakness and helped stop diarrhoea. The former was attributed to the presence of glucose in ORS. The latter may have been associated with the fact that doctors prescribed it for diarrhoeal diseases which could imply that ORS would stop the diarrhoea. Other properties of ORS were believed to be providing resistance and cooling the body. One retailer mentioned that it was useful for dehydration.

Most retailers were not quite sure of the methods of using ORS. Those who did know said that two teaspoons mixed in a glass of water would have to be given between 3 and 5 times a day.

On the whole, retailers seemed to be favourably inclined towards ORS, since it was harmless, something that they could recommend to a diarrhoeal patient without any risk, and it meant good business.

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* It is possible that all these names refer to Electral/Electrolytes and these 'new' names are just mispronounced versions of the same.

5. APPENDICES

APPENDIX A1

Statistics of Population, Industry, and Agriculture for Bastar District

	Total	**Rural**	**Urban**
Population (millions)	1.84	1.73	0.11
%	100	94	6
Industry			
Units of operation	NIL		
Agriculture:	**Area***	**Production** (1982-83)**	
Rice	528	372	
Maize	28	37	
Wheat	3	4	
Finger millet	12	3	
Nigerseed	17	4	
Linseed	4	0.8	
Sesamum	2	0.2	

APPENDIX A2

Statistics of Population, Industry, and Agriculture for Durg District

	Total	**Rural**	**Urban**
Population (millions)	1.89	1.35	0.54
%	100	71	29
Industry	**Product**		**Sales (Rs crores)**
Units of operation:			
Associated Cement Co., Jamul	Grey cement,		86.56
Beco Steel Castings, Bhilai	Heavy steel castings Grey iron castings, Technological equipment		12.00

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* Area in '000 hectares

** Production in '000 tonnes.

Industry	Product	Sales (Rs crores)
Bharat Refractories, Bhilai	Refractory bricks	10.84+
Bhilai Engg. Corpn., Bhilai	Steel castings, Grey iron casting	12.00
Bhilai Wires, Bhilai	Mild steel and high carbon steel wires	5.90
Dharmasi Morarji Chemical Co., Kumhari	Single superphosphate, Sodium silica fluoride, Aluminium	13.67
Simplex Engg. and Foundary, Bhilai	Spare parts such as cooling plates, long shafts	5.50

Agriculture	Area*	Production** (1982-83)
Rice	356	314
Wheat	21	13
Gram	38	15
Tur	8	6
Linseed	43	6

APPENDIX A3

Statistics of Population, Industry, and Agriculture for East Nimar District

	Total	Rural	Urban
Population (millions)	1.15	0.85	0.30
%	100	74	26

Industry	Product	Sales (Rs crores)
Units in operation :		
National Newsprint and Paper Mills, Nepa Nagar	Newsprint, Pulp, Chlorine, Caustic soda, Hydrochloric acid	30.97
NTC (M.P), Burhanpur	Cloth, Yarn	6.12
Shree Mansingka Oil Mills, Khandwa	Seed crushing, Solvent plant, Soaps, Vanaspati	13.97

Agriculture	Area*	Production** (1982-83)
Barley	112	96
Rice	33	29
Wheat	24	35
Tur	17	14
Groundnut	16	9
Banana	9	209
Cotton	145	64***

+ Include sales of unit in Hazaribagh District, Bihar.
* Area in '000 hectares
** Production in '000 tonnes.
*** '000 bales of 170 kg each

APPENDIX A4

Statistics of Population, Industry, and Agriculture for Shivpuri District

	Total	Rural	Urban
Population (millions)	0.87	0.78	0.09
%	100	90	10
Industry			
Units in operation		NIL	
Agriculture	**Area***	**Production** (1982-83)**	
Wheat	88	133	
Barley	61	22	
Maize	29	21	
Gram	54	49	
Groundnut	12	8	

* Area in '000 hectares
** Production in '000 tonnes.

APPENDIX B

Information about the Villages

	Jagdalpur		Balod	
	Bastnar	**Bakel**	**Chauky**	**Limora**
Estimated				
Total population	N.S.	1500	10461	2000
No. of voters	N.S.	400	2100	N.S.
Caste	%	-	-	%
Hindus	100	-	-	100
Brahmin/upper class	-	-	-	-
Landowning farmers	-	-	-	99
Non-landowning farmers	90	-	-	1
Trader class/Banias	-	-	-	-
Untouchables/Harijans	10	-	-	-
Muslims				
Landowning farmers	-	-	-	-
Non-landowning farmers	-	-	-	-
Other occupation	-	-	-	-
Sweepers/Chamars	-	-	-	-
Others				
Gurjur	-	-	-	-
Bhil	-	-	-	-
Adivasi	-	-	-	-

	Shivpuri		Khandwa	
	Singh Niwas	**Mohari Kalan**	**Paladi**	**Arud**
Estimated				
Total Population	1900	1550	1069	5000
No. of voters	900	1000	657	2200
Caste	%	%	%	%
Hindus	100	100	50	68
Brahmin/upper class	3	10	2	2
Landowning farmers	72	59	24	41
Non-landowning farmers	3	4	16	12
Trader class/Banias	2	1	-	3
Untouchables/Harijans	20	25	8	11
Muslims				
Landowning farmers	-	1	-	0.3
Non-landowning farmers	-	-	-	-
Other occupation	-	-	-	-

	Shivpuri			
	Singh Niwas	**Mohari Kalan**	**Khandwa Paladi**	**Arud**
Sweepers/Chamars	-	-	2	3
Others	-	-	48	29
Gurjur	-	-	8	-
Bhil	-	-	40	-
Adivasi	-	-	-	29

	Jagdalpur		Balod	
	Bastnar	**Bakel**	**Chauky**	**Limora**
	No.	No.	No.	No.
Facilities existing in the villages				
Co-operatives (Artisan, Dairy products, etc.)	-	-	-	-
Existence of schools for children	-	*	*	-
No. of schools	-	1	2	-
Existence of schools for adults	-	*	-	-
No. of schools	-	1	-	-
Existence of village health/ Anganwadi/frontline workers	-	-	-	-
Existence of electricity for agriculture/irrigation	-	-	*	-
No. of users	-	-	4	-
Existence of electricity for lighting	-	-	*	-
No. of users	-	-	1300	-
Existence of flour mills/chakki	-	-	*	*
No. of flour mill/chakkis	-	-	7	1
Existence of Radio receivers	*	*	*	*
No. of sets	25	3	1200	100
Existence of TV receivers	-	-	*	*
No. of sets	-	-	5	1
Existence of Provision stores	-	-	*	-
No. of stores	-	-	4	-
Existence of Medical stores	-	-	*	-
No. of stores	-	-	1	-

	Shivpuri			
	Singh Niwas	**Mohari Kalan**	**Khandwa Paladi**	**Arud**
	No.	No.	No.	No.
Facilities existing in the village				
Co-operatives (Artisan, Diary product, etc.)	-	-	-	-
Existence of schools for children	*	*	*	*
No. of schools	3	2	1	2
Existence of schools for adults	-	-	-	*
No. of schools	-	-	-	1
Existence of village health/ Anganwadi/frontline workers	*	*	-	-
No. of AWW/Frontline workers	1	1	-	-

* implies the facility exists
- implies the facility does not exist

	Shivpuri		Khandwa	
	Singh Niwas	Mohari Kalan	Paladi	Arud
	No.	No.	No.	No.
Existence of electricity for agriculture/irrigation	-	*	*	*
No. of users	-	70	4	150
Existence of electricity for lighting	-	*	-	*
No. of users	-	200	-	60
Existence of flour mill/chakki	*	*	*	*
No. of flour mills/chakkis	3	2	1	5
Existence of Radio receivers	*	*	*	*
No. of sets	20	5	25	100
Existence of TV receivers	-	-	-	*
No. of sets	-	-	-	8
Existence of Provisions stores	*	*	-	-
No. of stores	5	5	-	-
Existence of Medical stores	-	-	-	-
No. of stores	-	-	-	-

	Jagdalpur		Balod	
	Bastnar	Bakel	Chauky	Limora
Water sources				
For drinking water	No.	No.	No.	No.
Wells	-	-	2	1
Hand pumps	12	2	-	1
Tubewells	-	-	2	-
River	-	1	1	-
Pond	-	-	3	1
Other (Nallah)	1	-	-	-
For agriculture				
Wells	-	-	-	-
Hand pumps	-	-	-	-
Tubewells	-	-	-	-
River	-	-	-	-
Pond	-	-	-	-
Other	-	-	-	-
For home use				
Wells	-	-	-	-
Hand pumps	-	-	50	-
Tubewells	-	-	-	-
River	-	1	-	-
Pond	-	-	-	1
Other (Nallah)	1	-	-	-

	Shivpuri		Khandwa	
	Singh Niwas	Mohari Kalan	Paladi	Arud
Water sources				
For drinking water	No.	No.	No.	No.
Wells	7	12	4	8
Hand pumps	3	2	-	1
Tubewells	-	-	-	2
River	-	-	-	1

	Shivpuri			
	Singh Niwas	Mohari Kalan	Khandwa Paladi	Arud
Pond	1	-	-	-
Other (Nallah)	-	-	-	-
For agriculture				
Wells	5	100	4	-
Hand pumps	-	-	-	-
Tubewells	4	50	-	-
River	-	-	-	-
Pond	1	-	-	-
Other	-	-	-	-
For home use				
Wells	1	-	-	-
Hand pumps	1	2	-	-
Tubewells	-	-	-	-
River	-	-	1	-
Pond	-	-	-	1
Other (Nallah)	-	-	-	-

	Jagdalpur		Balod	
	Bastnar	Bakel	Chauky	Limora
Total No. of homes	NS	400	830	300
	%	%	%	%
Kucha homes	NS	100	80	97
Pucca homes		-	20	3
Others		-	-	-
Rain				
During monsoon				
None	-	-	-	-
Very little	-	-	-	-
Enough	✓	✓	✓	✓
Area prone to floods	-	-	-	-
During winter				
None	-	✓	-	✓
Very little	✓	-	✓	-
Enough	-	-	-	-
Area prone to floods	-	-	-	-

	Shivpuri			
	Singh Niwas	Mohari Kalan	Khandwa Paladi	Arud
Total No. of homes	525	230	125	700
	%	%	%	%
Kucha homes	48	65	80	71
Pucca homes	48	22	20	29
Others	5	13	-	-
Rain				
During monsoon				
None	-	-	-	-
Very little	-	✓	✓	-
Enough	✓	-	-	✓
Area prone to floods	-	-	-	-

	Shivpuri			
	Singh Niwas	Mohari Kalan	Khandwa Paladi	Arud
During winter				
None	-	-	√	√
Very little	√	√	-	-
Enough	-	-	-	-
Area prone to floods	-	-	-	-

	Jagdalpur		Balod	
	Bastnar	**Bakel**	**Chauky**	**Limora**
Where water sources located	Hand pump in the north	South of the village	South of the village	North of the village
Where salt obtained from	Killpar	Bhanpuri	Rajnand Gaon	Balod/ Dhamthi
Type of sugar	Sugar Gur	Sugar Gur	Gur Sugar	Gur Sugar
Where sugar obtained from	Not specified	Bhanpuri	Rajnand	Karhi Bhadar, Balod
Where chemist located	Jagdalpur, Godam	Farsaguda	Not specified	Karli Bhadar, Balod, Dhamthi
Nearest Anganwadi/PHC location	Tokapal	Farsaguda	No Anganwadi	No Anganwadi in the block
Frequency of visits	No	No	Not specified	Not specified
Where nearest hospital located	Killpar	Farsaguda	Chauky	Sakra
Medical types consulted (No.)				
Allopathic	No	-	3	-
Ojha	No	Farsaguda	-	-
Disposal of household garbage	Outside the village	Outside the village	Outside the house in pit	Pit outside the village
Transportation modes to				
Base town	Bus	Palky, cycle	Bus, Motor cycle	Bullock cart, cycle
Other villages	-	-	-	Bullock cart, cycle

	Shivpuri			
	Singh Niwas	**Mohari Kalan**	**Khandwa Paladi**	**Arud**
Where water sources located	Spread all over the village	Inside and outside of house	South of the village	Adivasi Mohalla
Where salt obtained from	Shivpuri Market	Shivpuri	Badwah	Khandwa
Types of sugar	Shakkar Gur, Sugar Bura	Sugar Shakkar Custard	Sugar Gur	Sugar Gur
Where sugar obtained from	Shivpuri	Own shop	Badwah	Khandwa
Where chemist located	Shivpuri	Shivpuri	Indhaudi	Khandwa

	Shivpuri		Khandwa	
	Singh Niwas	**Mohari Kalan**	**Paladi**	**Arud**
Nearest Anganwadi/PHC location	Shivpuri	In the village	Mundi	Pandhana
Frequency of visits	Once in 6 months	Not specified	Not specified	No
Where nearest hospital located	Shivpuri	Shivpuri	Indhaudi	In the village
Medical types consulted (No.)				
Allopathic doctor	2	In Shivpuri	Not specified	2
Ojha	5	4	-	-
Disposal of household garbage	Outside the village	In the pit outside the village	Outside the village	In the pit outside the village
Transportation modes to				
Base town	Bus, Trucks	-	Bullock cart	Bus, Bullock cart
Other villages	Cycle, Bullock cart	Cycle, Bullock cart	Bullock cart	Bus, Bullock cart

	Jagdalpur		Balod	
	Bastnar	**Bakel**	**Chauky**	**Limora**
Roads to the village	1	1	3	2
Main crops of the village	Rice Mustard Linseed	*Urad*(black gram), Kutki (swank sevan), *Jao* (Barley) . Dhan, Mudia (ragi)	Kodia (varagu) *Laung* (clove)	*Urad* (black gram) Rice
Other crops grown in the village	-	-	Wheat Gram	Arhar (red gram)

	Shivpuri		Khandwa	
	Singh Niwas	**Mohari Kalan**	**Paladi**	**Arud**
Roads to the village (No.)	1	1	1	1
Main crops of the village	Groundnut, *Ral chana* (gram)*Re-ela chana* (gram)*Alsi* (linseed) Wheat, *Urad* (black, gram) *Moong* (green gram), *Arhar*)	Wheat, Jawar, Millet	Jawar Cotton *Urad* (black gram)	Sugar cane Cotton

	Shivpuri			
	Singh Niwas	**Mohari Kalan**	**Khandwa Paladi**	**Arud**
Other crops grown	(red gram), *Soyabean*, *Tilli* (Sesamum)	*Moongfali* (G.Nut) *Tilli* (sesamum) Potato Burajal *Matar* (peas) *Kadu* (Pumpkin)	Jawar Cotton *Urad*(black gram) *Arhar* (red gram)	Wheat Gram Betel

	Jagdalpur			
	Bastnar		**Bakel**	
	Fruits	**Season**	**Fruits**	**Season**
Fruits grown/in which season	-	-	-	-
	Veg.	**Season**	**Veg.**	**Season**
Vegetables grown/ in which season	-	-	Shem (Beans)	-
Cereals available/in which season	-	-	-	-

	Balod			
	Chauky		**Limora**	
	Fruits	**Season**	**Fruits**	**Season**
Fruits grown/in which season	Mango Banana *Jamun* (Pluma) Sitafal (Winter Squash)	- - -	-	-
Vegetables grown/in which season	**Veg.** *Gobi* (Cabbage) Brinjal (Aubergine)	**Season** -	**Veg.** *Gobi* (Cabbage) *Muli* (Radish) Brinjal (Aubergine) *Palak* (Spinach) Potato	**Season** - - - - -
Cereals available/in which season	*Gehun* *Chana* (gram) Rice	-	Rice -	-

	Shivpuri			
	Singh Niwas		Mohari Kalan	
	Fruits	**Season**	**Fruits**	**Season**
Fruits grown/in which season	None	-	Mango	Winter
			Jamun (Pluma)	Winter
	Veg.	**Season**	**Veg.**	**Season**
Vegetables grown/in which season	None	-	Tomato	Rainy
			Pumpkin	Rainy
			Thori (Sponge)	Rainy
			Lokky (Gourd)	Summer
			Tinda (Round Gourd)	Summer
			Potato	Winter
			Matar (Peas)	Winter
			Brinjal	Winter
Cereals available/in which season	*Arhar* (Red gram)	Jan-Feb	Wheat	-
	Moong (Green gram)	Oct-Nov	Jawar	-
	Urad (Black gram)	Oct		
	Masar (Lentils)	March		

	Khandwa			
	Paladi		Arud	
	Fruits	**Season**	**Fruits**	**Season**
Fruits grown/in which season	None	-	Mango	Summer
			Banana	Winter
	Veg.	**Season**	**Veg.**	**Season**
Vegetables grown/in which season	Tomato	-	*Palak*	-
	Lokky (Gourd)	-	*Dhania*	-
	Methi (Fennu-greek)	-	Tomato	-
	Pumpkin	-		
Cereals available/ in which season	*Gehun* (Wheat)	-	*Gehun* (Wheat)	Whole year
			Chana	Whole year
			Makai (Maize)	Whole year

APPENDIX C1

Information from Mothers

	Jagdalpur		Balod	
	Bakel	**Bastanar**	**Limora**	**Chauky**
	No.	No.	No.	No.
All respondents	15	16	11	17
Types of family				
Joint family	10	12	9	3
Single unit family	5	4	2	14
Not specified*	-	-	-	-
No. of joint families	10	12	9	3
No. of adults				
1 - 2	9	12	2	2
3 - 4	1	-	5	1
5 - 6	-	-	1	-
7+	-	-	1	-
No. of children				
1 - 2	2	6	5	2
3 - 4	6	6	3	1
5 - 6	2	-	-	-
7+	-	-	1	-
No. of single unit families	5	4	2	4
No. of adults				
1	-	-	-	-
2	3	4	2	13
3	-	-	-	1
4	-	-	-	-
5+	2	-	-	-

	Shivpuri		Khandwa		
	Singh Niwas	**Mohari Kalan**	**Arud**	**Jas-wadi**	**Paldi**
	No.	No.	No.	No.	No.
All respondents	14	14	9	9	3
Types of family					
Joint family	8	14	8	4	3
Single unit family	6	-	1	5	-
Not specified*	-	-	-	-	-

* No. of children and adults also not specified

	Shivpuri		Khandwa		
	Singh Niwas	**Mohari Kalan**	**Arud**	**Jas-wadi**	**Paldi**
	No.	No.	No.	No.	No.
No. of joint families	8	14	8	4	3
No. of adults					
1 - 2	5	6	3	1	2
3 - 4	2	3	3	-	-
5 - 6	1	4	1	2	1
7 +	-	1	1	1	-
No. of children					
1 - 2	3	4	5	1	2
3 - 4	5	8	2	3	1
5 - 6	-	2	1	-	-
7+	-	-	-	-	-
No. of single unit families	6	-	1	5	-
No. of adults					
1	-		-	-	-
2	5		1	2	1
3	-		-	3	-
4	-		-	-	-
5 +	1	-	-	-	-

	Jagdalpur		Balod	
	Bakel	**Bastanar**	**Limora**	**Chauky**
	No.	No.	No.	No.
No. of single unit families	5	4	2	4
No. of children				
1	-	3	1	2
2	2	-	1	4
3	-	1	-	3
4	-	-	-	3
5+	2	-	-	2
All respondents	15	16	11	17
No. of children/respondents				
1	3	7	2	2
2	2	2	5	6
3	1	3	4	3
4	4	4	-	4
5+	5	-	-	2
Average no. of children/ respondents	3.40	2.25	2.18	2.88
No. of children aged up to 2 years				
No. of children				
1	9	9	8	10
2	-	-	1	-
3	-	-	-	-
4	-	-	-	-
5	-	-	-	-
None	6	7	2	7

	Shivpuri		Khandwa		
	Singh Niwas	Mohari Kalan	Arud	Jas-wadi	Paldi
	No.	No.	No.	No.	No.
No. of single unit families (cont.)	6	-	1	5	-
No. of children					
1	1		-	-	-
2	2		1	2	-
3	2		-	1	-
4	1		-	2	-
5 +	-		-	-	-
All respondents	14	14	9	9	3
No. of children/respondents					
1	3	2	1	-	2
2	3	2	6	4	-
3	4	6	1	3	-
4	4	2	-	2	1
5+	-	2	1	-	-
Average no. of children/ respondents	2.64	3.00	2.33	2.77	2.00
No. of children aged up to 2 years					
1	7	5	6	6	2
2	-	3	-	-	-
3	-	-	-	-	-
4	-	-	-	-	-
5+	-	-	-	-	-
None	7	6	3	3	1

	Jagdalpur		Balod	
	Bakel	Bastanar	Limora	Chauky
	No.	No.	No.	No.
All respondents	15	16	11	17
No. of children aged 2 - 5 years				
No. of children				
1	6	8	5	14
2	5	3	2	2
3	1	-	-	-
4	-	-	-	-
5	-	-	-	-
None	3	5	4	1
No. of children aged 5+ years				
No. of children				
1	3	2	1	4
2	4	4	2	3
3	3	1	-	3
4	-	-	-	-
5	1	-	-	1
None	4	9	8	6

	Shivpuri		Khandwa		
	Singh Niwas No.	Mohari Kalan	Arud No.	Jas-wadi No.	Paldi No.
All respondent	14	14	9	9	3
No. of children aged from 2 - 5 years					
No. of children					
1	11	3	7	8	1
2	1	7	1	-	1
3	-	-	-	-	-
4	-	-	-	-	-
5+	-	-	-	-	-
None	2	4	1	1	1
No. of children aged above 5 years					
No. of children					
1	1	3	2	3	1
2	5	4	2	1	-
3	2	1	-	2	-
4	-	-	-	-	-
5+	-	-	-	-	-
None	6	6	5	3	2

	Jagdalpur		Balod	
	Bakel No.	Bastanar No.	Limora No.	Chauky No.
Illness of children aged up to 2 years				
Respondents having children up to 2 years	9	9	9	10
Illness:				
Diarrhoea	9	9	9	10
Dysentery	2	1	-	2
Cholera	3	3	1	-
Colds/coughs	3	3	5	3
Chicken-pox	1	-	1	1
Measles	-	1	2	5
Pneumonia	-	-	1	1
Vomiting	-	-	-	-
Stomach trouble	-	-	-	-
Sukha rog	-	-	-	-
Polio	-	-	-	-
Fever	-	1	1	-
Others	2	5	-	-

	Shivpuri		Khandwa		
	Singh Niwas No.	Mohari Kalan No.	Arud No.	Jas-wadi No.	Paldi No.
Illness of children aged up to 2 years					
Respondents having children up to 2 years	7	8	6	6	2
Illness:					
Diarrhoea	7	8	6	4	2
Dysentery	1	-	2	-	-
Cholera	-	-	1	-	1
Colds/Coughs	2	5	1	6	2

	Shivpuri		Khandwa		
	Singh Niwas	Mohari Kalan	Arud	Jas-wadi	Paldi
	No.	No.	No.	No.	No.
Chicken-pox	1	-	-	-	-
Measles	-	-	1	-	1
Pneumonia	2	4	-	-	-
Vomiting	-	-	-	-	-
Stomach trouble	-	-	-	-	-
Sukha rog	-	-	-	-	-
Polio	1	-	-	-	-
Fever	1	-	1	-	1
Others	-	-	2	1	-

	Jagdalpur		Balod	
	Bakel	Bastanar	Limora	Chauky
	No.	No.	No.	No.
Illness of children aged from 2 - 5 years				
Respondents having children aged 2 - 5 years	12	11	7	16
Illness :				
Diarrhoea	5	6	2	7
Dysentery	-	2	-	-
Cholera	3	4	-	1
Colds/coughs	2	-	2	7
Chicken-pox	-	-	-	1
Measles	-	-	-	-
Pneumonia	-	1	-	1
Vomiting	-	-	-	-
Stomach trouble	-	-	-	-
Sukha rog	-	-	-	-
Polio	-	-	-	-
Fever	-	-	-	-
Others	3	5	-	-
No disease	5	2	5	8

	Shivpuri		Khandwa		
	Singh Niwas	Mohari Kalan	Arud	Jas-wadi	Paldi
	No.	No.	No.	No.	No.
Illness of children aged from 2 - 5 years					
Respondents having children aged 2 - 5 years	12	10	8	8	2
Illness :					
Diarrhoea	10	10	4	8	1
Dysentery	6	3	1	-	-
Cholera	2	1	1	-	-
Colds/coughs	6	7	1	6	-
Chicken-pox	2	-	-	-	-
Measles	1	1	-	2	-
Pneumonia	4	2	-	-	-
Vomiting	-	-	-	-	-

	Shivpuri		Khandwa		
	Singh Niwas	Mohari Kalan	Arud	Jas-wadi	Paldi
	No.	No.	No.	No.	No.
Stomach trouble	-	-	1	-	-
Sukha rog	-	-	-	-	-
Polio	-	-	-	-	-
Fever	1	1	2	-	1
Others	4	2	1	-	-
No disease	1	-	3	-	1

	Jagdalpur		Balod	
	Bakel	Bastanar	Limora	Chauky
	No.	No.	No.	No.
All respondents	15	16	11	17
Occupation of respondents				
Working	15	5	9	4
Non-working	-	11	2	13
Kind of work				
Working respondents	15	5	9	4
In fields	15	5	9	4
Care of livestock	-	-	-	-
Temporary labour	-	-	-	-
No. of hours spent in working in fields				
Respondents working in fields	15	5	9	4
Up to 2 hours	-	-	-	-
2 - 5 hours	3	3	1	3
5 - 8 hours	12	2	8	1
8+ hours	-	-	-	-
Care of children				
Working respondents	15	5	9	4
Taking all along	2	2	1	-
Take only younger kids along	3	1	-	-
Leave all behind with someone	5	1	7	2
Leave all behind alone	4	1	1	2
Not specified	1	-	-	-

	Shivpuri		Khandwa		
	Singh Niwas	Mohari Kalan	Arud	Jas-wadi	Paldi
	No.	No.	No.	No.	No.
All respondents	14	14	9	9	3
Occupation of respondent					
Working	11	8	1	-	1
Non-working	3	6	8	9	2
Kind of work					
Working respondents	11	8	1	-	1
In fields	8	7	1	-	-
Care of livestock	3	1	-	-	-
Temporary labour	-	-	-	-	1*

* No. of hours not specified

	Shivpuri		Khandwa		
	Singh Niwas	Mohari Kalan	Arud	Jas-wadi	Paldi
	No.	No.	No.	No.	No.
No. of hours spent in working in fields					
Respondents working in fields	8	7	1	-	-
Up to 2 hours	1	4	-	-	-
2 - 5 hours	7	3	-	-	-
5 - 8 hours	-	-	1	-	-
8+ hours	-	-	-	-	-
Care of children					
Working respondents	11	8	1	-	1
Taking all along	3	8	-	-	-
Take only younger kids along	3	-	-	-	-
Leave all behind with someone	-	-	-	-	-
Leave all behind alone	5	-	1	-	1
Not specified	-	-	-	-	-

	Jagdalpur		Balod	
	Bakel	Bastanar	Limora	Chauky
	No.	No.	No.	No.
All respondents	15	16	11	17
Type of house				
Kuchha	14	13	9	7
Pucca	-	1	-	8
Kuchha/Pucca	1	-	1	1
Not specified	-	2	1	1
No. of rooms				
1	-	6	-	-
2	2	7	3	7
3	6	1	3	7
4	4	-	1	1
5+	3	-	3	1
Not specified	-	2	1	1
Sources of drinking water				
Well	-	-	-	8
Hand pump	-	6	8	-
Tap	-	-	8	4
Ponds/river	13	10	3	4
Others	-	-	-	-
Not specified	2	-	-	1
Sources of other water				
Well	-	-	-	8
Hand pump	-	6	8	-
Tap	-	-	8	4
Ponds/river	13	10	3	4
Not specified	2	-	-	1

	Shivpuri		Khandwa		
	Singh Niwas	Mohari Kalan	Arud	Jas-wadi	Paldi
	No.	No.	No.	No.	No.
All respondents	14	14	9	9	3
Type of house					
Kuchha	10	7	7	7	3
Pucca	1	2	-	1	-
Kuchha/Pucca	-	4	2	1	-
Not specified	3	1	8	-	-
No. of rooms					
1	8	7	-	1	3
2	4	4	3	1	-
3	1	3	4	2	-
4	1	-	1	2	-
5+	-	-	1	3	-
Not specified	-	-	-	-	-
Source of drinking water					
Well	4	14	8	-	-
Hand pump	9	-	-	-	-
Tap	-	-	-	9	-
Ponds/river	-	-	-	-	3
Not specified	1	-	1	-	-
Source of other water					
Well	3	14	8	1	-
Hand pump	9	-	-	-	-
Tap	-	-	-	8	-
Ponds/river	-	-	-	-	2
Not specified	2	-	1	-	1

	Jagdalpur		Balod	
	Bakel	Bastanar	Limora	Chauky
	No.	No.	No.	No.
All respondents	15	16	11	17
Type of container for Drinking water				
Narrow neck	4	3	5	12
Wide/open mouth	-	1	2	4
Not specified	11	12	4	2
Other water				
Narrow neck	9	12	3	2
Wide/open mouth	9	12	3	2
Not specified	6	4	8	15
Whether livestock kept				
Yes	8	1	7	1
No	7	15	4	16
Where livestock kept				
Those who keep livestock	8	1	7	1
Within the house	6	-	7	-
Separate	1	1	-	1
Not specified	1	-	-	-

	Jagdalpur		Balod	
	Bakel	Bastanar	Limora	Chauky
Where people usually go to the toilet				
Latrine in the house	-	-	-	2
Latrine near the house	-	-	-	-
Open fields	15	15	11	9
Others	-	-	-	6
Not specified	-	1	-	-

	Shivpuri		Khandwa		
	Singh Niwas	Mohari Kalan	Arud	Jas-wadi	Paldi
	No.	No.	No.	No.	No.
All respondents	14	14	9	9	3
Type of container for Drinking water					
Narrow neck	2	9	2	-	-
Wide/open mouth	12	4	-	6	3
Not specified	-	1	7	3	-
Other water					
Narrow neck	-	-	6	-	-
Wide/open mouth	14	10	6	6	1
Not specified	-	4	3	3	2
Whether livestock kept					
Yes	5	7	4	6	2
No	9	7	5	3	1
Where livestock kept					
Those who keep livestock	5	7	4	6	2
Within the house	2	5	1	-	1
Separate	3	2	3	5	-
Not specified	-	-	-	1	1
Where people usually go to the toilet					
Latrine in the house	-	2	1	5	-
Latrine near the house	-	1	1	2	-
Open fields	14	11	6	2	3
Not specified	-	-	1	-	-

	Jagdalpur		Balod	
	Bakel	Bastanar	Limora	Chauky
	No.	No.	No.	No.
All respondents	15	16	11	17
Where infant stools disposed of				
Outside the house	-	-	-	-
Fields	-	-	-	-
Inside the house in garbage	-	-	-	-
Inside the house in toilet	-	-	-	-
Not specified	15	16	11	17
Whether radio listened to				
Yes	1	4	8	13
No	7	2	-	1
Not specified	7	10	3	3
Whether T.V. viewed				
Yes	-	-	-	-
No	7	1	1	1
Not specified	8	15	10	16

	Jagdalpur		Balod	
	Bakel	Bastanar	Limora	Chauky
Whether newspaper looked at				
Yes	-	-	2	2
No	7	2	1	1
Not specified	8	14	8	14
No. of calendars/posters				
None	-	-	-	-
1	2	2	2	5
2+	5	11	9	9
Not specified	8	3	-	3

	Shivpuri		Khandwa		
	Singh Niwas	Mohari Kalan	Arud	Jas-wadi	Paldi
	No.	No.	No.	No.	No.
All respondents					
Where infant stools disposed of					
Outside the house	11	7	-	3	-
Fields	-	3	-	-	-
Inside the house in garbage	-	-	-	-	-
Inside the house in toilet	-	1	-	4	-
Not specified	3	3	9	2	3
Whether radio listened to					
Yes	7	3	8	7	-
No	7	10	1	2	3
Not specified	-	1	-	-	-
Whether TV viewed					
Yes	1	-	1	5	-
No	13	13	7	4	3
Not specified	-	1	1	-	-
Whether newspaper looked at					
Yes	2	1	1	5	-
No	12	12	7	4	3
Not specified	-	1	1	-	-
No. of calendars/posters					
None	6	8	-	1	-
1	2	1	2	-	2
2+	5	4	5	8	-

APPENDIX C2

Information from Health Practitioners

	Frontline workers		Other medical	
	ICDS/ AWW	Others	MBBS	Others
Base: All respondents	-	10	11	9
Length of practice				
Up to 4 years	-	3	3	1
4 - 8 years	-	2	1	2

	Frontline workers		Other medical	
	ICDS/ AWW	Others	MBBS	Others
8+ years	-	2	7	5
Not specified	-	3	-	1
Time of operation				
Full time	-	6	10	3
Part time	-	2	1	5
Not specified	-	2	-	1
Type of training				
Degree	-	-	11	2
Diploma	-	1	-	1
Other formal training	-	2	-	1
No formal training	-	2	-	3
No special training	-	1	-	1
Under training	-	1	-	-
Not specified	-	3	-	1
Type of medicine				
Allopathic	-	4	10	6
Homeopathic	-	-	1	1
Ayurvedic	-	1	-	2
Not specified	-	6	-	2
Language				
Hindi	-	10	11	9

APPENDIX C3

Information from Retail Outlets

	Town	Village
Base: No. of outlets	*10*	*6*
Duration of outlet		
Up to 4 years	-	1
4 - 8 years	2	1
8+ years	8	3
Not specified	-	1
Training/Licence		
Formal	2	1
No formal	8	4
Not specified	-	1
Time of operation		
Full time	9	5
Part time	1	1
Type of medicine stocked		
Allopathic	1	2
Allopathic & Ayurvedic	6	3
Allopathic, Ayurvedic & Unani	1	-
General goods like babyfood, tinned food etc.	2	1
Not specified	2	-
Language		
Hindi	10	6

APPENDIX D

Glossary of Terms

English	Local Term
A social caste	*Brahmin*
Ayurvedic practitioner	*Vaid*
Blood diarrhoea	*Khooni dast*
Blood turns black	*Khoon kala par jata hai*
Blood turns to water	*Khoon pani ban jata hai*
Boils	*Phoda-phunsi*
Bottle	*Shishi*
Boy	*Chora*
Broom	*Bora*
Brother-in-law	*Jeth*
Cancer	Cancer
Cholera	*Haiza*
Cold	*Sardi, Jukham*
Colour was yellow	*Peela hota hai*
Cough	*Khansi*
Device to make liquor	*Mahura*
Diarrhoea	*Marda, Dast*
Dispensary	*Tippasua*
Drought	*Sukha*
Dry/Emaciated	*Sookha*
Evil eye/bad omen	*Nazar*
Face becomes black	*Chehra kala ho jata hai*
Face gets distorted	*Shakaal bigar jatti hai*
Fever	*Taap, Bukhar*
Field	*Kheth*
Fieldwork	*Khethibari*
Fresh, Radiant	*Chehre pe tej*
Gets irritated and won't smile	*Chir-chira ho jata hai, hasta nahin*
Good	*Achha*
Green loose motion	*Hare dast*
Headache	*Seer dard*
Heat	*Garmi*
Heat in the stomach	*Pet main garmi*
Head of the village	*Sarpanch*
Health	*Tabiat*
Illness	*Bimari*
Injection	*Tika*
Irritation/irritable	*Chir-Chira; Chir-Chirapan*
Legs become limp	*Paer dhili par jati hai*
Lethargic	*Sust*
Liver pain	*Zigar-ka-dard*
Liquor	*Paru*
Looks unwell/unhappy	*Chehra utar jata hai*
Loose motions	*Dast*
Loose motions with blood	*Khooni dast*
Makes hot	*Garam karti hai*
Malaria	*Malaria*

English	Local Term
Milky stools with foam	*Doodhiya dast zhaag ke saath*
Monsoon	*Sawan*
Mucus	*Aam dast*
Nausea	*Jee ghabrana*
Pain in the stomach	*Pet mein dard*
Pale, mildly yellow	*Halka peela*
Passes milk	*Doodh nikalta hai*
Passes stools many times	*Kai bar tatti karta hai*
Pneumonia	Pneumonia
Polio	Polio
Prickliness	*Khaaj-khujli*
Rainy season	*Barsaat*
Running nose	*Zukham*
Sister-in-law	*Jethani*
Skin	*Chamri*
Skin cracks	*Chamri phat jaati hain*
Skin becomes soft, loose and dry	*Chamri dhilli aur sookhi par jati hain*
Sore eye	*Aankh aana*
Start teething	*Dant nikalana*
Sticky	*Chitki-chitki*
Stomach-ache	*Audasta*
Stool with mucus	*Aaub*
Sugar	*Shakkar*
Sunken eyes	*Dhansi hui aankhen*
Teeth fall off	*Daant gir jate hain*
Tetanus	Tetanus
Thick stool	*Garha tatti*
Thin	*Patla*
Thin and long	*Soout*
Tuberculosis	*TB*
Turmeric	*Haldi*
Typhoid	Typhoid
Used to pass less urine	*Pesab kum aata hai*
Village judiciary	*Panchayat*
Vomit	*Ulti*
Vomit out milk	*Doodh patak detei hain*
Weak	*Kamjor*
Weak/thin	*Duble-patle*
Winter	*Sardi*
Worms	*Janoona*
Worship	*Pooja*
Yellow and green stools	*Peele aur hare dast*
Yellow urine	*Peela pesab*

APPENDIX E

Food List

English	Local Term
Health Practitioners	
Apple	*Seb*
Banana	*Kela*
Biscuits	Biscuit
Bread	*Double roti*
Buffalo milk	*Bhains ka doodh*
Buttermilk	*Lassi*
Coconut milk	*Nariyal ka doodh*
Curd	*Dahi*
Fruit	*Phaal*
Fruit juice	*Phaal ka raas*
Green gram	*Moong dal*
Groundnut	*Moongphali*
Indian wheat bread	*Roti*
Indian wheat bread with pulses	*Dal-roti*
Juice of raw mango	*Kuchha aam ka raas*
Lemon juice	*Nimbu pani*
Light food	*Haalka khana*
Milk	*Doodh*
Opium	*Afeem*
Opium seed	*Khus-khus*
Porridge	*Dalia*
Pulses	*Dal*
Rice	*Chawal*
Rice and lentil preparation	*Khichri*
Rice with pulses	*Chawal aur dal*
Rice water	*Chawal ka pani*
Sago	*Sabudana*
Salt water	*Namak pani*
Spinach	*Palak*
Sweet lime juice	*Mosambi ka raas*
Tea	*Chai*
Thin milk	*Patla doodh*
Vegetables	*Sabji*
Yellow lentil	*Arhar dal*
i. Food included in the normal diet	
Mothers	
Apple	*Seb*
Biscuits	Biscuit
Black gram	*Urad*
Chilli	*Mirch*
Green gram (Split)	*Moong dal*
Indian wheat bread	*Roti*
Jaggery	*Gur*
Leafy green vegetables	*Saag*

English	Local Term
Mango pickle	*Aam ka achar*
Milk	*Doodh*
Oil-fried preparation	*Tel mein pakka hua khana*
Papaya	*Papita*
Potato	*Aaloo*
Puffed rice	*Murmura*
Pulses	*Dal*
Red gram	*Masoor dal*
Rice	*Chawal*
Sour food	*Khattai*
Spices	*Masaale*
Sugar	*Shakkar*
Tea	*Chay*
Vegetables	*Sabji*
Wheat	*Gehun*
Yellow gram	*Thuar dal*
ii. Food given during diarrhoeal disease	
Apple	*Seb*
Biscuits	Biscuit
Bland khichri	*Feeki khichri*
Bread	*Double roti*
Buttermilk	*Lassi, Matha*
Cow's milk	*Gai ka doodh*
Curd	*Dahi*
Herbs	*Jadi-bootiyan*
Indian wheat bread	*Roti*
Jaggery	*Gur*
Lentil	*Dal*
Made out of sugar	*Patasha*
Made with rice	*Paje*
Milk	*Doodh*
Nutmeg	*Jaiphal*
One egg with mother's milk	*Egg mila kar*
Opium	*Afeem*
Orange	*Santra*
Parmal	*Marmara*
Porridge	*Dalia*
Puffed rice	*Murmura*
Pulses	*Dal*
Red gram	*Masoor dal*
Rice	*Chawal*
Rice & lentil preparation taken with clarified butter	*Khichri*
Sago porridge	*Sabudana kheer*
Sugar and lemon in milk	*Doodh mein shakkar aur nimboo*
Sweet lime	*Mosammi*
Tea	*Chay*
Grains	*Anaaj*

English	Local Term
iii. Remedial oral mixtures : Main ingredients	
Black tea	*Kali chay*
Black tea with lime	*Kali chay aur nimboo*
Borax	*Suhaga*
Electral	Electral
Glucose	Glucose
Herbal medicine (Bark of tree)	*Buchh*
Herbs in milk/water	*Doodh pani mein jadi bootiya*
Hot things like alcohol	*Garm jaise sharab*
Juice of mint	*Pudina ka raas*
Lemon juice	*Nimbu pani*
Opium	*Afeem*
Water	*Pani*

APPENDIX F

Medicine List

	Health Practitioners				Retail outlets	
	Frontline workers ICDS/ AWW	Others	Other medical MBBS	Others	Stocked	Asked/ Prescribed/ Advised
Ageoline	-	-	-	-	*	*
Alphonredi syrup	-	-	-	-	-	*
Ampicilin	-	-	-	-	-	*
Ampicilin syrup	-	-	-	-	*	-
Amoxycilin drops	-	-	-	-	*	-
Analgin	-	-	*	-	-	-
Anticillin	-	-	-	-	-	*
Antecedents	-	-	-	-	*	-
Antrikenol	-	*	-	-	-	-
APC	-	-	*	-	-	-
Arishta	-	-	-	-	*	-
Arishtra Gelep	-	-	-	-	*	-
Arsenic Alb	-	-	-	*	-	-
Asav	-	-	-	-	*	-
Baralgan	-	*	-	-	-	-
B-Complex	-	-	-	-	*	*
B-Complex syrup	-	-	-	-	-	*
B-Complex B-1, B-6						
B-12 Tablet	-	-	-	-	*	-
B-Complex tonic	-	-	-	-	-	*
B-Doplisin	-	-	-	-	-	*
Bethadoxin	-	-	-	-	*	-
Bomitape syrup	-	-	-	-	-	*
Buroplan	-	-	*	-	-	-
Calcium	-	-	-	-	-	*
Caracon	-	-	-	-	-	*
Cavilon mixture	-	-	-	-	-	*
Cerixon	-	-	-	-	*	-
Chawanprash (Dabur's)	-	-	-	-	-	*
Chlorates	-	-	-	*	-	-
Chloroeffescyn	-	-	*	-	-	-
Chloromycetin	-	*	-	-	*	-
Chloromycetin	-	-	*	-	-	-
Chloramphenicol	-	-	-	-	-	*
Chlorophylum Lakanica	-	-	-	*	-	-
Chlorostrep	-	*	*	*	-	*
Cuprum	-	-	-	*	-	-
Curton	-	-	-	*	-	-

	Health Practitioners					
	Frontline workers ICDS/ AWW	Others	Other medical MBBS	Others	Retail outlets Stocked	Asked/ Prescribed/ Advised
Dabur's (whole range)	-	-	-	-	*	-
Dependal	-	-	-	-	*	-
Dextrose saline	-	-	-	-	*	-
Dextrose	-	-	-	-	*	-
Davthpapeshwar	-	-	-	-	*	-
Diasegan	-	-	-	-	-	*
Dicanthiplex	-	-	-	-	*	-
Disgiphlex	-	-	-	*	-	-
Drakshasav powder	-	-	-	-	-	*
Draxosav	-	-	-	-	*	-
Electral	-	-	-	-	*	*
Entero Quinol	-	-	-	-	*	*
Enterostrep	-	-	*	-	-	*
Enterostrep syrup	-	-	-	-	*	-
Enterostrep suspension	-	-	*	-	-	-
Enterovioform	-	*	-	*	-	-
Entobax	-	-	-	-	-	*
E-Sulin	-	-	-	-	-	*
Extract Orange	-	-	-	-	-	*
Flagyl	-	-	-	-	-	*
Ferozobolin	-	-	*	-	-	-
Fragelton	-	-	-	*	-	-
Galdinial	-	-	-	-	-	*
Gentasporin	-	-	-	-	-	*
Glucose	-	*	-	-	*	-
Glucose saline	-	-	-	*	-	-
Gripe water	-	-	-	-	*	*
Haemoglobin tonic	-	-	-	-	-	*
Hajifalutus	-	-	*	-	-	-
Hepto Globin	-	-	-	-	-	*
Hopamy Tablets	-	-	-	-	-	*
IB	-	*	-	-	-	-
Idicholore	-	-	-	-	-	*
IG	-	-	*	-	-	-
Interrinal	-	-	*	-	-	-
Interacon	-	*	-	-	-	-
Interacunal	-	*	-	-	-	-
Isokin	-	-	-	-	*	-
Kaolin	-	-	-	*	-	-
Kaolin mixture	-	-	-	*	-	-
Kentostraji	-	-	-	-	*	-
Kumarisasoli	-	-	-	-	*	-
Lalaran	-	-	-	-	*	-
Latube	-	-	-	-	-	*
Lomotil	-	-	-	*	-	-

	Health Practitioners					
	Frontline workers ICDS/ AWW	Others	Other medical MBBS	Others	Retail outlets Stocked	Asked/ Prescribed/ Advised
Lopramite	-	-	*	-	-	-
Matretzol	-	-	-	*	-	-
MC-Nure	-	-	-	*	-	-
Metasel	-	-	-	-	-	*
Methoxophyrin	-	-	-	-	-	*
Metronidazole	-	-	-	-	-	*
Metrogyl	-	-	-	-	-	*
Mexaform	-	*	-	*	*	*
Nimogex	-	-	-	-	*	-
Nomanedegel syrup	-	-	-	-	*	-
Normal glucose saline	-	*	-	-	-	-
ORS powder	-	-	-	-	*	-
Ostocalcium	-	-	-	-	-	*
Ostor	-	-	-	-	-	*
Paracetamol	-	-	-	*	-	-
Penicillin injection	-	-	-	-	-	-
Penicillin tablets	-	-	-	-	*	*
Philizinodil	-	-	-	*	-	-
Potankrus	-	*	-	-	-	-
Pratoguid tablets	-	-	-	-	-	*
Primin	-	-	-	-	*	-
Prolar	-	-	-	-	-	*
Prolein	-	-	-	-	*	-
Protoquid	-	-	-	-	*	-
Protaquin	-	-	-	-	-	*
Punaasua	-	-	-	-	*	-
Pyrozam	-	-	*	-	-	-
Reposition	-	-	-	-	*	-
Sanjivini vatti	-	-	-	-	-	*
Saline	-	-	-	-	*	-
Scarium	-	-	-	-	*	-
Scaturn	-	-	-	-	*	-
Septran	-	-	*	-	-	-
Septran syrup	-	-	-	-	*	-
Sharcoperon	-	-	-	-	*	-
Sheragaldin	-	-	*	-	-	-
Skromaitileen	-	-	-	-	*	-
Soromine	-	-	*	-	-	-
Spazmazol	-	*	-	-	-	-
Streptomagma	-	-	-	*	*	*
Streptomycin	-	-	*	-	-	*
Streptrotride	-	-	-	*	-	-
Sulphadiazine	-	-	-	*	-	-
Sulphaguanidine	-	*	-	-	-	-
Sulphamycin	-	-	-	-	*	-

	Health Practitioners					
	Frontline workers ICDS/ AWW	Others	Other medical MBBS	Others	Retail outlets Stocked	Asked/ Prescribed/ Advised
Sulphathizor	-	-	*	-	-	-
Sulphappinal	-	-	*	-	-	-
Sulphacunel	-	*	-	-	-	-
Sulpha Gonedin	-	-	*	-	-	-
Tebitol	-	-	-	-	*	-
Terramycin	-	-	-	-	-	*
Tetracyclin	-	-	-	-	-	*
Tromethenophyrin	-	-	-	-	-	*
Valimur	-	-	-	*	-	-
Vicks	-	-	-	-	*	-

APPENDIX G1

Method of Preparation of ORS/SSS/HAF

Mothers

Those who recommended :

HAF	30
Glucose	10
SSS	1
ORS	11
Electral	10
Water	8

HAF	Ingredients	Amount
	1. Crushed nutmeg juice	NS*
	2. Jaggery	NS
	'Aujmaheet'	NS
	Water	NS
	(Ingredients mixed and the solution administered)	
	3. Whey	NS
	4. 'Billipatra'	NS
	Water	NS
	(Ingredient is burnt, the ash mixed with water and administered)	
	5. Black tea	NS
	Sugar	NS
	6. Black tea	NS
	Lime	NS
	Sugar	NS
	7. Boiled water (cooled)	NS
	Sugar	NS
	Lime	NS
	8. Watery tea	NS
	9. Sweet lime juice (Mausambi juice)	NS
	10. Mint juice	NS
	11. Water	NS
	Curd	NS
	Cuminseed or sugar	A little
	Salt	A little
	(Curd and water is churned together and cuminseed/sugar and salt added)	
	12. Honey	NS
	13. Grape juice	NS
	14. Buttermilk	NS
	15. Tea	NS
	16. Bal Janam Ghuti	1 spoon
	Water	1 spoon
	(Mixed and administered)	
	17. Borax	NS
	Hot water	1 spoon

* Not specified

	Ingredients	Amount
	Mango seed (crushed)	A little
	(4 times a day for 4-5 days)	
	18. Tea	NS
	Lime juice	NS
	19. Herbs	NS
	Water	
	(Herbs crushed and mixed in water)	NS
	20. Mango skin juice	NS
	21. Black tea (no milk/sugar)	NS
	22. 'Khukha'	A little
	Water	1 cup
	(Ingredient boiled in water and 2-3 spoons administered twice in the morning and once in the evening)	
	23. Afeem	NS
	Fruit of doda	NS
	(Ingredients are brewed together and administered)	
	24. 'Buchh' bark (ground)	NS
	Mother milk	NS
	(Ingredients mixed and administered)	
	(Mentioned by 2 persons)	
	25. Alcohol	1 drop
	Mother's milk	NS
	26. Egg	1
	Mother's milk	NS
	27. Milk	NS
	Lemon	1
	(Lemon squeezed in milk and administered)	
	28. Groundnut oil (raw)	NS
	29. Opium	NS
	Water	NS
	(Mixed and administered)	
Glucose	1. Powder	NS
	Water	NS
	(Mentioned by eight persons)	
	2. Powder	NS
	Boiled water (Cooled)	1 tea cup
	(Mentioned by two persons)	
SSS	1. Sugar	A pinch
	Salt	A pinch
	Water	1 tea spoon
	(Administered every 2 hours and milk given along with it)	
ORS	1. Powder	NS
	Water	NS
	(Mentioned by two persons)	
	2. Powder	1 spoon
	Water	1/2 litre
	(3-4 times a day for 8 days)	
	3. Powder	1 spoon
	Milk or water	NS
	(2 times a day)	

	Ingredients	Amount
	4. Powder	1 spoon
	Water	1 glass
	(Whenever child gets thirsty)	
	(Mentioned by two persons)	
	5. Powder	1 spoon
	Water	1 spoon
	(Powder mixed with water in spoon itself and administered twice a day)	
	6. Powder	1 spoon
	Water	2 spoons
	7. Powder	A pinch
	Water	1/2 spoon
	8. Powder	1 spoon
	Hot water	NS
	(1 spoon of solution 2-3 times a day)	
	9. Powder	1 tea spoon
	Water	4 tea spoon
	(Administered twice a day)	
Electral	1. Powder	1 packet
	Water	1 litre
	(1 litre of solution administered throughout the day with a spoon whenever lips dried up)	
	2. Powder : Big child	1 spoon
	Small child	1/2 spoon
	Water	NS
	3. Powder	1 packet
	Water (boiled)	1 litre
	4. Powder	A little
	Water	A little
	5. Powder	2 table spoon
	Water	1/2 glass
	6. Powder	2 spoons
	Water	1 cup
	(Administered thrice a day)	
	7. Powder	1 spoon
	Water	1/2 glass
	8. Powder	1/2 spoon
	Water	1/2 cup
	9. Powder	2 spoons
	Water	1 glass
	(1 glass of solution every hour or whenever child is thirsty)	
	10. Powder	1/2 spoon
	Water	1 small glass
	(Administered 2-4 times a day)	
Water	1. Boiled water	NS
	(Mentioned by four persons)	
	2. Plain water	
	(Mentioned by four persons)	NS

APPENDIX G2

Method of Preparation of ORS/SSS/HAF

Health Practitioners

	Frontline workers		Other medical	
	ICDS/ AWW	Others	MBBS	Others
Those who recommended :				
HAF/Nimbu pani	-	5	10	2
Glucose water	-	1	4	3
SSS	-	3	3	3
Electral/electrolytes	-	8	8	5
ORS	-	1	3	3
Water/Boiled water	-	8	10	4

	Ingredients	Amounts
HAF/Nimbu pani		
Frontline-Others	1. Hot water	NS*
	Sugar	NS
	Lemon juice	NS
	2. 'Chirenta' (A type of herb) is ground and given	
	3. Lime juice	NS
	4. Water (Boiled)	1 glass
	Sugar	1 spoon
	5. Salt	a pinch
	Lemon	1/2
	6. Water (boiled)	1 glass
	Sugar	2 spoons
	Salt	a pinch
	Lemon	1/2
Other medical-MBBS	1. 'Khus-khus'	
	2. Semi herbal medicines	
	3. 'Murakhia'	
	4. Opium	
	5. 'Afeem' tablets	
	6. Juice of bamboo leaves	
	7. Water	NS
	Sugar	NS
	Lime	NS
	8. Water	1 glass
	Sugar	NS
	Salt	NS
	Lemon	1/2
	9. Boiled water	NS
	Sugar	NS
	Salt	NS
	Lime juice	NS

---

* Not specified

	Ingredients	Amount
	10. Water	250gm
	Sugar	NS
	Salt	1/4 spoon
	Lime	1/2
Other medical - others	1. Milk	NS
	Lemon juice	NS
	2. Opium (afeem) is given	NS
Glucose water		
Frontline - others	1. Glucose	NS
Other medical- MBBS	1. Glucose	NS
	2. Glucose	20 gms
	Salt	1/2 spoon
	Soda	1/2 spoon
Other medical - others	1. Glucose	NS
	2. Glucose	NS
	Water	NS
	(Mentioned by two persons)	
SSS		
Frontline - Others	1. Water	1 jug
	Sugar	4 spoons
	Salt	NS
	2. Water	NS
	Sugar	NS
	Salt	NS
	(Mentioned by two persons)	
Other medical- MBBS	1. Water	NS
	Sugar	NS
	Salt	NS
	2. Water	1 cup
	Sugar	1 spoon
	Salt	1/2 spoon
	3. Water (boiled & cooled)	1 cup
	Sugar	1 spoon
	Salt	1 pinch
	(Mentioned by two persons)	
Other medical - others	1. Sugar	1 spoon
	Water	1 litre
	Salt	1 pinch
	2. Water	1 glass
	Sugar	1 handful
	Salt	1 pinch
	3. Water	NS
	Sugar	NS
	Salt	NS
Electral/Electrolytes		
Frontline - Others	1. Water	100 gm
	Electral	1 packet
	2. Water (boiled & cooled)	1 glass
	Electral	1 spoon
	3. Water	1 glass
	Electral	1 spoon
	4. Water (hot)	1 glass

	Ingredient	Amount
	Electral powder	1 spoon
	5. Water (boiled & cooled)	NS
	Electral powder	NS
	(Mentioned by 2 persons)	
	6. Electral	NS
	7. Water (boiled & cooled)	1 glass
	Electral	1 tea spoon
Other medical - MBBS	1. Water	1 glass
	Electral	1 spoon
	(mentioned by two persons)	
	2. Water	1 glass
	Electral	1/4 glass
	3. Electral	NS
	(Mentioned by two persons)	
	4. Water	NS
	Electral	1 spoon
	5. Water	1 glass
	Electral	1/4 packet
	6. Water (boiled and cooled)	1 glass
	Electral	1 spoon
Other medical - Others	1. Electral	NS
	2. Water	1 glass
	Electral powder	3-4 spoons
	3. Water	1 litre
	Electral	1 packet
	(Mentioned by two persons)	
	4. Water	NS
	Electral	1 tea spoon
	Fresh juice	NS
ORS		
Frontline - Others	1. ORS	NS
Other medical - MBBS	1. ORS	NS
	2. Water	1 glass
	ORS	1/2 spoon
	3. ORS	NS
Other medical- Others	1. Water (boiled and cooled)	1 glass
	ORS	2 spoons
	2. Water	1 kg
	ORS	1 packet
	3. Water (boiled & cooled)	1 litre
	ORS	1 packet

APPENDIX G3

Method of Preparation of ORS/SSS/HAF

Retailers

Base: Those who recommended :

HAF	1
SSS	4
Electral	5
ORS (shown by moderator)	6
Boiled water	2

		Ingredients	Amount
HAF	1.	Water	NS
		Curdled milk	NS
SSS	1.	Water	NS
		Sugar	25gm
		Salt	25gm
	2.	Water	1 glass
		Sugar	3-4 spoons
		Salt	a pinch
	3.	Water	1 glass
		Sugar	1 spoon
		Salt	1 pinch
	4.	Water (boiled)	NS
		Sugar	a little
		Salt	3 pinches
Electral	1.	Water	200gm
		Powder	1 spoon
	2.	Water	1 glass
		Powder	2 spoons
	3.	Water (boiled)	NS
		Powder	NS
	4.	Water	1 cup
		Powder	2 spoons
ORS	1.	Water	NS
		Powder	NS
	2.	Water (boiled)	NS
		Powder	NS

MAHARASHTRA

1. INTRODUCTION

1.1 STATE PROFILE

Comprising 26 districts, Maharashtra is the third largest state in India both in area and population. The most important district is Greater Bombay which has the greatest density of population, as it has one of the four largest cities in the country—Bombay.

State boundaries are formed by the Arabian Sea in the west, Gujarat in the north-west, Madhya Pradesh in the north, Andhra Pradesh in the south-east and Karnataka and Goa in the south. Its coastal area, the Konkan, is dotted with paddy fields and coconut plantations. The state has three major rivers flowing across it; the Godavari, Bhima, and Krishna. The major crops grown are sugarcane, cotton, groundnut (cash crops); and rice, jowar, bajra and wheat (food crops). Irrigation is fairly inadequate and the state has the lowest percentage of irrigated area in the country.

Rainfall in the state varies considerably, with coastal districts having very heavy rainfall and the others receiving less, as they lie in the rain shadow region of the Sahayadri mountain range.

The literacy rate is 39.18%, the third highest in the country.

The districts and base towns sampled in Maharashtra are:

	District	**Base Town**
1.	Ratnagiri	Mandangarh
2.	Solapur	Pandharpur
3.	Nanded	Kinwat
4.	Bhandara	Bhandara

1.2 DISTRICT PROFILE

Of the 26 districts, four were selected as research centres.

The names of four districts and the base towns, and the villages in each, where the research was carried out, are given below:

District	**Base Town**	**Villages**
Ratnagiri	Mandangarh	Velas Tide
Nanded	Kinwat	Bodhadi Block[1] Lakhampur
Bhandara	Bhandara	Jamb[1] Palora
Solapur	Pandharpur	Tarapur[1] Umbre/Bardi*

* In Solapur, two smaller villages were sampled, as only one group could be convened in each

1 All villages are the larger villages, i.e., had a population ranging between 3000 to 4000. The remaining villages had a population between 1000-2000.

COMMUNITY HEALTH C

Levels of Economic Development (around 1980) for these districts have been given below.

A brief comparison between the four districts has been presented below, on the following parameters:

level of Economic Development (indices on the basis of an all-India index = 100);
population;
percentage of urban population to the total population, in each district; and
percentage of villages electrified under the Rural Electrification scheme.

	Economic Development (index)	**Total population (lakhs)**	**% of Urban population**	**% of Villages electrified**
Bhandara	72	18	13	68
Nanded	63	18	19	94
Ratnagiri	47	21	8	64
Solapur	93	26	29	92

Source: CMIE; Profiles of Districts

Solapur seems to be the most developed district and also one which is relatively more urbanized. Ratnagiri is the most agricultural and hence perhaps the least developed. Though Nanded is less developed than Bhandara it seems to have a larger percentage of electrified villages.

1.3 VILLAGE PROFILE

The reported (by the Sarpanch) population figures and the census figures are given below. As can be seen, there is in some cases considerable difference in the two estimates.

District	**Village**	**Population 1981 Census**	**Reported**
Ratnagiri	Velas	3710	1700
	Tide	1673	1800-2000
Solapur	Tarapur	3334	2000
	Umbre/Bardi	1514/1499	1761/1400-1500
Nanded	Bodhadi	3713	6300
	Lakhampur	1844	2000
Bhandara	Jamb	3398	3015
	Palora	1670	1569

Jamb was the only village which had a Primary Health Centre (PHC). Two other villages, Tarapur and Umbre, were PHC subcentres. All villages had some health or medical facilities, such as *vaidyas,* ayurvedic doctors, homeopaths, allopaths, etc.

However, only one village, Budhadi, had a medical store/chemist's shop. All villages had a provision store which occasionally sold, in addition to provisions, items like soaps, detergents, etc. OTC products like headache tablets.

There seems to be a predominant caste in each district. These are given below:

Solapur	:	Marathas
	:	(upper caste Hindus)
Bhandara	:	Teli, Kunbhi and Harijans in equal numbers
Nanded	:	Banjara and Adivasis (tribals)
Ratnagiri	:	Bhandaris (upper caste, landowning Hindus)

In all villages there was some presence of Harijans (up to 50%). However, they did not seem to be discriminated against, at least in the matter of drinking water sources.

Virtually all villages had no proper toilets and the fields served as a substitute. Some however had soakpits or trenches on top of which planks were put to provide a place to squat.

Despite this lack of toilets, most villages were fairly clean with dried cowdung and clay coating the verandahs and floors of the *kuchha* houses. *Pucca* houses belonged to the richer people and/or usually the upper caste. The Sarpanch always had the largest and the most modern house. As many as two or three had their own gobar gas plants. The only village which was unhygienic, in that it had a bog in the centre of the village, which had mosquitoes and flies around it, was Jamb. Here filariasis was almost of epidemic proportions (as reported by our field team; a recent survey claimed that approximately 60% of the population over the age of 25 years had filariasis). Coincidentally, this was the only village which had a PHC.

All villages had a few places of worship, either a mosque or a temple, depending upon the prevalence of the religion.

Posters, walls and a vehicle (either a jeep or a "tanga") were used as advertising media. Notices of the latest entertainment (plays or movies) and public health notices ("Where there is water there are mosquitoes. Do not let water collect around your place") were displayed through these media.

Details of the villages as recorded on the village observation sheets are shown in Appendix B.

2. MOTHERS

2.1 RESPONDENTS PROFILE

Most respondents came from joint families. Only in the districts of Bhandara and Nanded, i.e., further east, did there seem a fairly large number who came from nuclear families.

All respondents were mothers of very small children with a large number having children who were only a year old. On an average, a respondent had 3-4 children. There were more working mothers than non-working mothers in the total sample. Of these most worked in the fields as manual labourers. While some took their children to their place of work, most left them behind. The caretaker was either an older child or some other adult.

In the larger villages, a fair number lived in *pucca* (brick and mortar houses), while those in smaller villages lived in *kuchha* (adobe) houses; which usually comprised one or two rooms.

The major source of water, both for drinking and for other uses, was cited to be wells. Only in two of the larger villages, Jamb and Tarapur, were wells not used at all.

Water was usually stored in wide/open-mouthed containers. However, drinking water was occasionally stored in narrow-necked, close-mouthed containers.

Those who kept livestock usually tethered them away from the house.

Interestingly, only two of the villages had toilets within the premises of the house. As a result, infant stools were usually thrown just outside the house or in the fields.

The two major media sources, and that too to a fairly limited extent, were the radio and newspapers.

2.2 CAUSES OF DIARRHOEA

Six reasons were broadly attributed to diarrhoea:

1. Food habits and specific food
2. Teething
3. Change in weather or a specific season
4. Evil eye
5. Lack of hygiene
6. Heat

2.2.1 Food Habits and Specific Food

Since diarrhoea is seen as a disease which children necessarily had (in some sense it was seen as inexorable) it was perceived to be due to a host of reasons, the commonest being the most obvious one, i.e., food.

Food which was spicy or pungent, sour, oily or very sweet was thought to cause diarrhoea. So also by overeating, i.e., eating greater quantities, and overstraining the system and causing indigestion.

Additionally, eating irregularly too was felt to be a causative factor. Meals which were not had on time, or food eaten all through the day was also felt to upset the digestive processes and cause an upset stomach.

Neonates, or breastfed children were also seen to suffer from diarrhoea. This was attributed to the only food they partook of, i.e., mother's milk. They believed that if the mother's food habits were faulty, the breast milk would get contaminated and would in effect be as if the child had ingested such "diarrhoeal food" on his own. Breast milk was felt to get contaminated very easily, e.g., they believed that it was warmed by the mother working in the sun, and became, because of the heat, a causative factor.

2.2.2 Teething

Teething was an accepted part of the normal growth processes, so also were the attendant signs such as irritability, diarrhoea, etc. Diarrhoea was understood by all mothers to be almost a logical consequence to teething which was the other well known cause of diarrhoea.

2.2.3 Change in the Weather or a Specific Season

The transition from one season to another, or the season when the leaves fall, was not perceived so much as the cause of diarrhoea, as it was the season in which it occurred most commonly. Specific seasons cited were all the three—summer, monsoons, and winter, from which it could be surmised that the disease was almost chronic, in that it was a frequently occurring disease.

2.2.4 Evil Eye

As a convenient explanation for the inexplicable occurrence of diarrhoea, the evil eye or some malevolent spirit was thought to affect the child (different from possession). While this could happen to the child directly, it could also happen indirectly through the mother, e.g., if the mother saw a lady who had just delivered a child, or if the legs of a child were stepped over. The evil eye could be cast upon either the child or upon the food or the water that the child drank.

Such mentions were restricted to small villages and those where there was a predominance of tribals (Banjaras and Adivasis) as in Nanded district.

2.2.5 Lack of Hygiene

Flies were understood to be carriers of dirt and were therefore perceived to be agents which caused diarrhoea. Resultantly, food from "hotels" or off the road was felt to be more prone to infection, especially during the monsoon, a season in which flies were thought to abound. Some women also said that if the nipple of the feeding bottle was unclean, i.e., not washed or sterilized, or if water wasn't boiled, a child could get diarrhoea. Notably, mention was

made of this factor only in the larger villages, Jamb, where there was a PHC, Bodhadi, and Velas.

Some in Tarapur thought that eating mud or clay might cause diarrhoea, but weren't sure. They felt that it caused a distended stomach and black stools. Some in Lakhampur too felt that eating mud or rubbish caused diarrhoea and claimed to see it reappear in the child's stool.

Drinking dirty water was also thought to be one of the causal reasons by mothers in villages in the coastal district (Ratnagiri), probably because the water in these regions is more unclean then elsewhere.

Some also attributed diarrhoea to worms which they believed ate up the food in the stomach.

2.2.6 Heat

Another fairly commonly mentioned cause was heat. They said that it was heat or sunshine which caused the *aav* or the mucus. The child's inability to withstand hot temperatures was thought to translate itself into diarrhoea. This was perceived to happen even to infants exposed to the outside surroundings for the first time.

"Hot breast milk" was also thought to cause an upset stomach.

2.2.7 Classification of Causes

Diarrhoea was thought to be a disease which occurred as a natural part of the growing up process. Though it occurred all through the year, it was felt to be more prevalent in certain seasons, e.g., monsoon and summer.

The Maharashtrian mother in her attempt to establish cause and effect relationships regarding this disease, included all possible explanatory factors. Some of these she had been taught, some she had had handed down to her through generations, some which she herself could observe and ratify. If the six broad causes discussed earlier were to be explained by each of these factors, the classification could probably be:

Explanatory Factors

		Causes
Taught	:	Hygiene, Food Habits
Handed Down	:	Heat, Evil Eye, Food Habits, Change in weather, Teething
Observed	:	Teething, Food Habits, Change in Weather

"Taught" factors are those which she had learnt through non-traditional or conventional sources like doctors, chemists, radio programmes, posters, etc. These had been superimposed upon her belief system, ratifying some of the things she already believed in (e.g., food habits), and introducing new beliefs (e.g., hygiene). Since this latter superimposition was done by credible sources, such as doctors, etc., it was accepted as a possible explanation. However, it should be noted that this had not been accepted by discarding any of her old beliefs, rather in addition to existing ones.

"Handed down" factors are those which had been passed down from generation to generation by mothers-in-law and elders. This group probably constituted the source for their stock of beliefs regarding this disease.

"Observed" factors are a subset of 'handed down' factors. These are factors which she not only believed caused diarrhoea, but are also those which she could see for herself and therefore ratify. Since such factors were doubly backed, by her pressure group and herself, these lent the greatest credence and were the most firmly entrenched in her mind.

Therefore she had most trust in and believed most strongly in the "observed factors". She perforce believed what her pressure group told her, since it was the only immediate source of referral she had. Though she believed, all "non-traditional" sources, her faith in such sources, was not as strong as evinced with the other two factors.

This would imply that if an effort was to be made to educate her about the causes of diarrhoea:

i. her pressure group could be educated along with her so that the cause would come from a more credible/practical source; and
ii. it should be communicated or demonstrated in a fashion that she could affirm the veracity of.

Both these would enhance the credibility of such inputs. Communication through the pressure group seems to be possible since:

i. the information would probably be disseminated more easily to the mother;
ii. because it was an elder who was communicating such a cause, she might find ways to ratify it of her own accord;
iii. when it actually came to doing something for the child, for all her faith in doctors and hospitals, the initial treatment was restricted to what she could do at home. Consequently, introduction through the mother-in-law would imply that she would rely on it first (as it was the nearest source), and heavily too. Though this is true of the education about causal factors, it is probably more true regarding the introduction of remedies.

In sum there do not seem to be any caste differences rather there seem to be differences by education. The more educated women seemed less superstitious, and more amenable to outside suggestions than the illiterates. Therefore women in the larger villages (who usually had some access to educational facilities) were more aware of prevention, causes, etc., of the disease.

2.3 ATTITUDES TO PREVENTION AND CURE

The mother's understanding of the concept of prevention was somewhat hazy and seemed to be very similar to cure. The dividing line between the two concepts seemed to be very faint, and at best was related to taking care of the child's diet so that he ingested food which was easily digestible. This kind of food consisted of bland, non-spicy, fresh, home-cooked food. Some mothers felt that if the child was being breastfed, the mother should regulate her diet and should not go out in the sun, as her breast milk would then become indigestible. Since prevention and cure were seen to be closely linked, there was probably some rub-off from curative measures to preventive ones, which led to some mothers feeling that medicines and/or a doctor's advice could also work as preventive measures.

Only mothers in Jamb (the centre which had the PHC), a notable

exception, seemed to have a very firm concept of prevention and were able to articulate it as well. In their opinion the following could act as preventive measures:

> no stale or rotten fruit or food should be given;
> personal and environmental hygiene (good drainage, no stagnant water, keeping the home clean) should be observed;
> 'vaccinations' (against cholera) should be taken;
> no readymade or fried or "outside" food should be given, especially during the monsoon; and
> the water should be filtered.

There were some, especially in the smaller villages, who were more fatalistic and felt that there was no way in which diarrhoea could be prevented, as it would recur repeatedly. Therefore they seemed to view it as a somewhat chronic disease, to a greater extent than women in larger villages, who seemed more aware of the disease and therefore had some concept of prevention, however half-baked.

While mothers felt that a child should be looked after and tended carefully, some were fairly lackadaisical about giving medicine, especially if they had to work in the fields all day.

Some mothers did not perceive cure as necessary. They felt the disease would run its own course (especially if it was due to teething) and would disappear of its own accord. Most, however, relied heavily on traditional home remedies which were in their own way, as specialized as modern-day medicines. An effective cure was perceived to be one which stopped the diarrhoea, i.e., made the stools firm and their frequency less. Additionally, any medicine which stopped the pain was also seen as useful.

Apart from the spectrum of home-made remedies, they had access to *vaidyas* or herb doctors, who prescribed roots and leaves of various plants. They believed that though he could cure, he didn't have a very good success rate. However, his failures were acceptable to them. In the event that he failed, some felt they could resort to a doctor from town.

There was some amount of secretiveness about the whole process of going to the *vaidya*. They did not want to talk about the *vaidya* himself, so spoke of his treatment, etc. The *vaidya* also doubled as a witch doctor of some kind as he was believed to be able to remove the evil eye which had been cast upon the child, with special incantations over milk, water, etc.

2.4 TYPES OF DIARRHOEAL DISEASE

Diarrhoea has different names in different parts of the state. The occurrence of such terms, by district is given in Table I.

The most commonly understood name seems to be *julabh*.

The terminology itself is an indicator of their understanding of the disease. *Patal* for instance means thin i.e., liquid and watery, and *patal sandaas* would therefore be a descriptive term for the disease. *Panzadi* means change in the weather when the leaves fall, therefore, it is understood as diarrhoea caused by a change in the weather, i.e., green diarrhoea.

The simplest way the mother identified the different types of diarrhoea was on the basis of what she saw, and the most vivid indicator seems to be colour.

TABLE I

	Solapur	Nanded	Bhandara	Ratnagiri
a. *Amvashya**	-	-	-	√
b. *Patal sandaas*	√	-	√	-
c. *Modshi***	√	√	-	-
d. *Dahalat*	√	-	-	-
e. *Hagvaan*	-	√	√	-
f. *Dabba*	-	√	-	-
g. *Jhada*	-	√	-	√
h. *Julabh*	√	√	-	√
i. Cholera	-	√	-	-
j. *Havare*	√	-	-	-
k. *Parsakade*	-	-	√	-
l. *Pauzadi*	-	-	√	-

Apart from colour and consistency, a mother used the frequency of motions as an indicator. A child normally defecated once or twice a day, when stricken with diarrhoea it was claimed to defecate 10-12, sometimes up to 20-25 times per day. However, even lower frequencies like 2-3 times a day were understood by some to constitute a diarrhoeal episode, especially if the consistency was liquid.

A pointer to improvement in the child's condition was a reduction in the frequency of stools. While the consistency and colour of the stool might remain the same even at the tail end of the episode, the frequency would necessarily decrease.

2.4.1 Classification of Types

The mother differentiates between the diarrhoea types on the basis of:

i. colour
ii. accompaniment of other symptoms;
iii. frequency of occurrence.

2.4.1.1 *Colour*

The five colours are white, red, green, yellow, and occasionally black. Green diarrhoea (*modshi* or *panzadi*) seemed to be one of the most common colours. It was thought to be foul smelling and extremely liquid. Some described the colour as greenish yellow. It usually occurred in relatively young children who had just begun teething.

White diarrhoea was that with *aav* or mucus. This was thought to be sticky and was described as net-like or like "cough" (phlegm). Some even spoke of white, milky (liquid) diarrhoea with little particles in it (in some cases like split milk).

Yellow diarrhoea was variously described as watery, smelly, or mustard seed-like, i.e., with small grains.

Red diarrhoea was always attributed to the presence of blood, either in small specks or in fairly discernible quantities, in the stool. This caused the

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* Usually understood to mean red, bloody stools

** Usually understood to mean green, watery stools

most worry among all these types, since the presence of blood was thought to make the disease somewhat serious.

Black diarrhoea was not mentioned frequently. Those who did mention it, said that it was due to the child eating mud or clay.

2.4.1.2 *Accompaniment of other symptoms*

The mother differentiated, perhaps more subconsciously than voluntarily, between ordinary episodes of diarrhoea and those episodes which were accompanied by signs other than plain loose, watery motions. These latter "accompanied episodes" are outlined below:

The presence of stomach pain or vomiting changed the mother's attitude to the episode, as these two attendant signs were thought to escalate the severity of the disease.

Also, wind in the stomach, causing the belly to bloat and the stomach to hurt, if accompanying the episode, was perceived to make the episode one which was out of the ordinary.

Weakness, another attendant sign, was explained by the amount of mucus discharged in the stool, i.e., the greater the quantity of mucus, the weaker the child would become.

2.4.1.3 *Frequency of occurrence*

Most seemed to classify diarrhoea into three types on the basis of frequency:

Short term, regular diarrhoea: This was thought to be the type which was fairly common and lasted for about a week or less.

Prolonged diarrhoea: This type was understood to be the kind which lasted for 15 days or more—some mothers spoke of episodes which lasted a whole month. This type was understood by some to be a deteriorated version of the first kind, e.g., when the child had normal diarrhoea (plain yellow and watery) for the first 7-8 days and subsequently started passing blood or had an increase in the number of motions. However, the length of this episode did not worry the mother unduly, as she felt that this kind too was fairly common.

Chronic diarrhoea: This type was the kind that recurred continually. Recurrent diarrhoea would encompass both short-term and prolonged diarrhoea, as it was understood to occur after an interval ranging from a week or more.

A fourth emergent classification was severe and mild. This was arrived at on the basis of the three factors discussed earlier—colour, accompanying symptoms, and frequency, in an ascending order of importance. Therefore a severe or worry-causing episode meant to the mother one in which the child was passing stools almost incessantly and without any control over the anal sphincter. Also, a fairly high frequency of motions, if accompanied by pain and/or vomiting, or if bloody, would also cause worry. Conversely, mild diarrhoea was that which was deemed common, i.e., fairly watery, quite frequent (3-8 times a day), and either yellow or green.

It should be noted that the mother treated the child regardless of whether the diarrhoea was severe or mild; though the treatment might not be administered very soon after the onset of the episode in the latter case.

2.4.2 Hypotheses Regarding the Different Classifications of Diarrhoea

Though mothers did not seem to have any readymade classifications, some classifications did exist subliminally. These ulterior classifications could be

exploited during communication in order to facilitate the mother's recognition of severe and mild diarrhoea. In turn, this would spur her to remedial action for her child.

A mother did not react to "mild" diarrhoea immediately. She waited for a few days or till it appeared "severe", before asking for help. Perhaps a message about mild diarrhoea could be communicated first, speaking in the manner and way with which she was most familiar. If she was impelled to take some action on the basis of this stimulus, then she would necessarily do the same for the more severe episodes. Hence, if the mildness and the ease and simplicity of its treatment was stressed it could lead to the more severe forms being treated as well. Also treatment such as ORT might seem more consonant with milder diarrhoeal diseases, and if seen as effective, i.e., able to reduce the frequency of motions, might be perceived as efficacious for even severe diarrhoeal episodes.

2.5 DESCRIPTION AND SYMPTOMS

Diarrhoea was usually described by the colour, consistency and smell of the stool. As discussed earlier, the colours mentioned were many—white, yellow, green, red, and occasionally black. In terms of the frequency of occurrence of each kind, and hence the frequency with which descriptions, using a particular colour, were given the following ranking is postulated:

a. Green/yellow (due to teething)
b. Red (due to blood in the stool)
c. White (due to mucus or too much milk)
d. Black (due to eating clay)

Apart from the colour, the consistency was described in a fairly graphic manner, often using various food items as analogies. These descriptions are provided below; again the attempt is to rank the words used in their frequency of occurrence. It should be borne in mind at the outset that common words, across the state, are very few and hence a lot of words are mentioned.

a. loose, like water;
b. with mucus (usually called cough or *aav*). This was described as being sticky and sometimes like a *jali* or a net;
c. with small pieces, like mustard seeds that grow in the fields;
d. with lumps, like biscuits;
e. with foam (because of undigested milk) i.e., like the lather formed after scrubbing with a soap.

In an attempt to make the description as vivid as possible analogies with products relating to their life were used by mothers. This would indicate that perhaps familiar symbols could be used when designing communication for them, rather than analogies with symbols with which they are unfamiliar.

The smell was usually referred to as "foul" or "bad", but no analogies were used to describe it further.

Symptoms that were associated with diarrhoea are listed below, again in a descending order of frequency of mention:

a. vomiting
b. pain in the stomach
c. blood

d. distended stomach/stomach with wind/heaving stomach
e. fever
f. worms

Ordinary diarrhoea, or that which had no attendant effects, was not seen as very severe or worry-causing, unlike diarrhoea with the accompaniments listed above. These are listed also in terms of descending worry-causers, i.e., while vomiting accompanying diarrhoea was seen as exceedingly harmful and dangerous, diarrhoea with worms was not, and was probably seen on par with ordinary diarrhoea.

The consequences that each "symptomatic" diarrhoea type is seen to have is discussed in detail in the following section.

2.6 CONSEQUENCES

Diarrhoea was seen to have three major consequences, mentioned below in descending order of frequency of occurrence:

a. weakness
b. dryness
c. death

2.6.1 Weakness

The child's debility and inactivity was attributed to the fact that the intake of food was far less than the output. This was in turn thought to lead to a loss of body weight. Listlessness, or lifelessness and lethargy were seen to characterize a weak child's behaviour. The child was also described as nervous, lacking energy, and thin. The disease was understood to transform a playful, laughing child into a irritable, lethargic and dull one. The child was also thought to be irritable, cranky and demanding, craving to be picked up and carried, and for its mother's attention.

Some also spoke of a general slowing down of the system, e.g., when the hands and legs of the child moved in a more lethargic fashion. This was attributed to the child's tiredness which was in turn thought to be due to incessant loose motions.

2.6.2 Dryness

Dryness was usually referred to indirectly as "looseness" or flaccidity *(dhilapan)*. Apparently, the most noticeable effect of diarrhoea was on the skin. Though this was an indicator of dryness, it was not perceived as such by most mothers. The child's skin was perceived to become 'loose', dry (2-3 days after the onset of the episode), and, by some, to turn black. If the child had dry, wrinkled skin he was thought to look like a dried *amla* or a shrivelled gooseberry. The skin was also thought to turn yellowish-white and make the child look pale. Some just spoke of a change in the child's skin and were unable to describe what exactly the change was.

Other markers of this consequence were variously described as cold hands and legs, fever, sunken eyes, loss of memory, rolling eyes, and a dry mouth. The child was thought to be continually thirsting for water.

On the whole, there seemed to be a fairly clear perception about dehydration. However, though seen as a consequence of diarrhoea, which was understood to be a killer, dehydration was not seen as a cause of death. This

was primarily due to a lack of information and a lack of the ability to see the cause and effect relationships clearly.

The treatment of dehydration is discussed in detail later.

2.6.3 Death

Death was seen as the final consequence in most villages and among most mothers. However, it was the rarest and hence the least noticeable . Only a few children were believed to die of it and the reasons were not very clearly perceived. Some reasons stated were those such as an increased frequency of evacuation or loose watery stools accompanied by vomiting. Despite the fairly high awareness of death as a possible consequence, and therefore a cause for worry, it was not seen to be the usual end result of diarrhoea, and hence the disease was not seen as worry-causing or as being of a very serious nature.

These perceptions about the seriousness of the disease could mean that in communication, if the disease is stressed as a killer it may lead to a certain amount of disbelief and incredulity which may not be there if the first two consequences (dryness and weaknesess) were emphasized.

In sum, in the village mother's mind, the disease was understood to follow a particular sequence, leading ultimately to death. This is given below:

1. Increased motions (with vomiting)
   ↓
2. Decreased appetite/inability to eat or drink much
   ↓
3. Decreased weight (and dryness)
   ↓
4. Weakness (and dryness)
   ↓
5. Death

2.7 FEEDING PRACTICES

Though there were no food types such as "hot", "cold" etc., food given during diarrhoea did seem to be different from normal food.

2.7.1 Staple/Normal Diet

The normal diet consisted of any of the following cereals forming the major part of the diet: wheat, barley (*jowar*), or rice. With these cereals were usually some kind of vegetable or pulse (*dal*) or curry (*amti*). Wheat in the form of *chappatis* or *roti* and barley in the form of *bhakri* or *roti**, seemed to be the two more common cereals. Rice seemed to be a more infrequently used cereal and also more of an invalid's diet, probably because it was a slightly more expensive cereal. The poorer women seemed to be able to afford only barley *chappatis* with some pulses or pickles.

Other fairly common foods were biscuits, milk, and to a lesser extent, bread. Fluids normally given to children were tea and coffee. Some of the poorer people drank only water. As a result of their poverty, children were breastfed till they were quite grown up, i.e., two years old or more.

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* *Chappati, bhakri* and *roti* are round circular items cooked by roasting.

Mention of non-vegetarian food was little, except in one coastal village where they spoke of giving children both eggs and fish.

2.7.2 Feeding During Diarrhoea

Usually the common food which was given had the following attributes: it should be easy to digest, light, and soft. It was usually given with an increased frequency, though in a lesser quantity.

2.7.2.1 *Older children*

In most cases, the food given during a diarrhoeal episode was the same as given normally, but cooked a little more and hence made a little softer, watery, and more easily digestible. Also, rice seemed to play a more pivotal role in the diet than before. Perhaps this was because rice could be more easily softened than either of the other two cereals—wheat and barley.

The commonest variation in rice preparations was *khichri*, i.e., pulses and rice cooked together to form a bland, soft food. Depending upon the method of cooking the *khichri*, the consistency could vary from liquid to fairly thick, the type depending upon the severity of the diarrhoeal episode. Rice with milk or plain watery rice was also felt to be "light" and easily digestible.

Another fairly common food was *sabudana* or sago. This was made into a watery liquid, either with water or milk, and fed to the child. Its merit was seen to lie in its very nature, i.e., that it was sticky and "light" on the digestive system.

Biscuits seemed another fairly popular item on the menu.

Liquids commonly given were tea, coffee, milk, and boiled water. Some also claimed to give lime water and water and sugar. *Kanji/Badli* was only mentioned in one instance. Fruit juice and/or plain fruit were also consumed. Mentions were also made of sugar water and glucose water in at least one village in each district. Oddly, such mentions seemed to be more frequent in the smaller villages. Other liquid variations were those such as *dal* water, jaggery water, coconut water, lime, and milk, etc.

The administration of such liquids was done only as and when the child clamoured for it. According to some mothers, the child's thirst decreased during diarrhoea along with its appetite, and hence it did not ask much for fluids. Others said that the thirst of the child did increase and they concomitantly increased the quantity of water. One of the main reasons for giving a child water was to lessen its thirst. This could imply that water was then seen, not as a basic necessity, but as some kind of functional item. This could probably be because, water even under normal circumstances was rarely drunk. This could be verified in the quantitative phase.

Glucose water was also seen as a functional item, as one which was especially useful in summer because it kept the "health in good condition" by cooling the body. Its ability to cool was thought to be its greatest asset. The glucose, of which mothers spoke, could be the ORS packets, as they described it as the white packets that doctors gave them.

2.7.2.2 *Neonates*

Breast-feeding carried on till the child was fairly old—in some cases till the child was almost five. Only after the first $1\frac{1}{2}$ - 2 years, the child's diet was supplemented by outside food such as *roti*, rice, etc. Some mothers claimed to feed their child water only after the first 4-5 months, before which the

child's diet was restricted to breast milk only. Even tablet, if prescribed by the doctor when the infant was still only breastfed, was given with mother's milk rather than water. Breast milk was seen as necessary both for the mother and the child and was not given only if the mother could not produce her own milk.

The process of weaning seemed to be done very gradually with the periods of food types overlapping being considerable. To illustrate: breastmilk was usually given up to when the child was 2 years old (sometimes also till the child was 5 years old), and solid food was started after approximately 6 months (sometimes after 2 years) and both solids and breastmilk were given simultaneously. This went on either till the child was too old to breastfeed or if the mother had had another child. If a child had either of the two former diets, i.e., exclusively breast milk or breast milk and solids, the child was referred to as breastfed or as a neonate.

A neonate's diet during diarrhoea when restricted, was pared down only to liquids, viz., breast milk, and all solid items were either dropped altogether or were "liquified" and administered to the child as done for older children. In no case did a mother claim to stop breastfeeding her child.

There was a belief that a mother's diet governed the digestive system of a neonate. Hence, if a neonate had a diarrhoeal attack, it was the mother's diet that would be curtailed and she would be forbidden to consume "hard" or spicy food. In conjunction with this, the frequency of breastfeeding was reduced to eliminate the possibility of the diarrhoea getting aggravated by the mother's milk. While some said that they deliberately decreased the frequency of feeding and therefore the quantity of milk, some claimed that the baby drank a lesser quantity of its own accord, because of its lack of appetite.

Some mothers who supplemented their milk with "outside" or cow's milk, stopped the latter during diarrhoea, and restricted the neonate's diet to only their own milk.

On the whole therefore, the practice of breastfeeding seemed to be fairly close to the ideal, leading to the hypothesis that this aspect of the problem at hand does not need a special focus.

Food that were restricted or banned during diarrhoea were those which were:

spicy or pungent—such as pickle or chillies;
"hard"—such as *chappatis;*
difficult to digest—such as milk, especially cow milk;
sweet;
uncovered, on which flies had sat;
oily food;
stale food; and
"cold" food, such as bananas.

Perhaps the food type that was avoided by everyone, as it seemed to be a known cause of diarrhoea, was spicy or pungent food. Both children and mothers who were breastfeeding, avoided spicy and pungent food during a diarrhoeal episode of the child.

2.7.3 Post-diarrhoeal Feeding

The only food given after an episode was over was the normal or the staple

diet. In some instances the watery diarrhoea-diet was continued for a couple of days before the child was put on to solids again. This was almost another weaning, as the child's diet moved from liquid or semi-liquid to solid.

2.8 TREATMENT

The treatment of diarrhoea and dehydration are discussed separately in this section. Since dehydration was perceived as a separate consequence of diarrhoea, its treatment was seen to be fairly dissimilar from that of diarrhoea. While the treatment of the former was done only with liquids—home-made and bought, the treatment of diarrhoea was done mainly with food. Semi-solids, traditional remedies, and modern medicines were all used to combat diarrhoea. In this section the treatment of dehydration precedes that of diarrhoea.

Dehydration: Dehydration was understood to be a lack of water or fluid in the system and was managed by replenishing the body with fluids such as:

plain water at regular intervals;
bitter gourd juice extract;
a few drops of water to moisten the lips;
coconut water;
lime water;
sugar water;
mosambi (sweet lime) juice;
water of *dal* (pulses);
dried lime with ash and honey;
Pej/Ambi (gruel) of wheat flour.

Kokum and *'Jeera'* boiled in water. This was believed to prevent the loss of body water. Taken just two or three times a day, this was believed to be very efficacious. Some felt that it increased the child's thirst and made it ask for water again and again. This was perceived to be only as a standby or an interim measure till they get to the doctor.

Glucose water. Glucose was obtained on prescription and was administered to the child after being mixed in boiled water. While some said that they bought packets of glucose, others spoke of glucose tins. Glucose was believed to combat dehydration by keeping the stomach cool and preventing the mouth from becoming dry and making the child less thirsty. Some called it Electral or glucose powder.

Liquid *sabudana* (sago). This was thought to have an action similar to glucose, i.e., cool the system.

Sugar salt solution. This was spoken of only in two villages, Jamb and Velas, which are in the districts of Bhandara and Ratnagiri respectively. The constitution of the solution was accurately postulated to be a pinch of salt and a handful of sugar in a *lota* of water. This is discussed in greater detail in Section 2.9.

Some women in Tarapur, a large village in the Solapur district, said that the child should not be given water repeatedly, as excess water in the system might lead to vomiting and cough and cold. They said that such a disease, due to an excess of water in the body, was called *panthari* and could occur if the child was continually fed with water. Resultantly, even if the child asked for water, it was denied it, and only a few drops would be given to moisten its

mouth. This unusual belief did not seem to be prevalent in the other districts of Maharashtra. This could be verified in the quantitative phase.

Loose stools: Mothers seemed to understand two basic concepts: (i) digestion, and (ii) energy through food, i.e., it was food which provided both sustenance and energy.

Therefore the treatment essentially comprised making the diet more bland and soft. However, other remedies followed, such as removing the evil spirit, feeding the child with herbs, and using various tablets and medicines. This is discussed in detail later.

2.8.1 Traditional (Including Home) Remedies

There were two types of traditional remedies—one was the type used to combat diarrhoea caused by the evil eye or spirit, etc., and the other the type which was used to combat the more ordinary diarrhoea, i.e., the kind which was not caused by the evil eye but by other more explicable causes.

2.8.1.1 *Remedies to combat the evil eye*

These included such remedies as taking the child to a *Maharaj* or a *vaidya*. These people were known in the village for their powers of magic, their ability to heal, but at the same time were known not to be doctors. In the villages where superstition was most blatant, *vaidyas* were resorted to both before and after medical treatment. The principal motivating factor in consulting a *vaidya* was the faith mothers had that his incantation and prescription of herbs would be effective. The usual practice the *vaid* followed was to prescribe some herbs and/or to mutter some incantations on the child which were sometimes put into a *taveez* (amulet) or a piece of thread which the child was made to wear. Some said that the *vaidyas* also cast spells on liquids such as milk, which was then fed to the child. While *vaidyas* were a way of life in some villages, in other, more "modern" villages such as Jamb (where a PHC exists) *vaidyas* were actually scorned and modern medicine was trusted to a greater extent. Other beliefs about getting rid of the evil eye were to do with offering live sacrifices, e.g., a rooster or a sheep, or praying to God by lighting joss sticks and offering coconuts.

These "doctors" served a two-fold purpose: to exorcise spirits, and also to heal with the aid of indigenous herbs.

2.8.1.2 *Other traditional remedies*

These remedies were not specific to any type of diarrhoea but were used commonly across diarrhoea types. The remedies were of two kinds—those that were used on the body and those that were ingested. The major remedy was in the form of food which were believed to have curative properties and were also gentle on the digestive system. These remedies are discussed below:

Remedies on the body: Though not a common remedy, a massage with coconut oil or oil of *mali* early in the morning for 2-3 days was believed to stop diarrhoea. While some massaged only the stomach, others massaged the arms and legs too. While the child might in fact obtain some relief from the massage, it is unlikely that the massage stopped the diarrhoea. Since it was perceived to stop it, it might imply that the usual diarrhoea episode was fairly mild and easy to control, as it probably disappeared of its own accord after a few days.

One unusual cure mentioned in Jamb (the PHC centre), was to make the child defecate on a pierced cloth on which there was an egg. This was believed to pass on the healing to the child.

Remedies that are ingested: These again were of two kinds. There were some food such as *sabudana* (sago) or fruits, which were consumed even normally, but were believed to have some healing properties. The others were not strictly "food" in that they did not usually form part of a staple diet, but were "food" only in that they could be eaten. This category comprised items such as *pudina* (mint), *karela* (bitter gourd), etc., and herbs such as *balhirda**, *sagargoti**, etc. Opiates such as opium and *pankutri** (a leaf that grows in the river) also belonged to this category. Interestingly, in those areas where opiates were used, they constituted the medical provisions that were stocked at home.

Most remedies that were administered were believed to stop diarrhoeal episodes, i.e., they functioned as anti-diarrhoeals.

Each of these is listed below, along with its perceived action:

	Item	**Perceived action**
a.	*Karela* (bitter gourd) juice extract	Controlled diarrhoea
b.	*Ghee* (clarified butter)+ water, in the morning	Not specified
c.	*Ghee* + oil + black pepper	Not specified
d.	*Pankutri* (river leaf), (either drunk with water or mixed with water and massaged on the stomach)	Pain killer
e.	*Afu* (opium), heated and given twice a day	Sedative/pain killer, stopped child from crying
f.	*Uttraodi* juice extract*	Stopped diarrhoea
g.	*Karela* leaves + breast milk, 3-4 times a day	Stopped diarrhoea
h.	*Raktapur/Dikemal/Hirda**	Stopped teething diarrhoea
i.	*Gutguti/Pingli*** mixed in a spoonful of milk and given once a day —during evenings	-
j.	Lime in milk	Cooled the stomach, made digestion easier.
k.	*Pudina* (mint) in water	-
l.	Burnt dry lime mixed with honey	Stopped diarrhoea
m.	Onion juice, plus honey, 2-3 times a day	Stopped diarrhoea which was accompanied by blood
n.	Sugar, plus camphor, burnt and mixed with mother's milk to form a thick paste, fed 2-3 times a day	Stopped diarrhoea
o.	*Balhirda*, plus honey, plus *Halkund* (turmeric), mixed to form a tablet, fed thrice a day	Gave relief to the child
p.	Seeds of the *Babul* tree	-
q.	*Jaiphal* (nutmeg) boiled in milk	Stopped diarrhoea
r.	Poppy seeds boiled in milk	Stopped diarrhoea
s.	Sugar water	Stopped diarrhoea
t.	Nutmeg, plus *mrugsheng*** plus *Sagargota*** mixed in milk fed twice a day	Stopped diarrhoea

* These are the indigenous names

** Only indigenous names known

It should be noted that most of these were considered as a first option, in that it would be tried before a doctor was consulted or outside help was taken. Knowledge of these remedies had been passed down through the generations only by word of mouth. While most believed these were fairly efficacious, modern medicine seemed to be far more effective and powerful.

2.8.2 Medical Treatment

Unexpectedly, the barrier which prevented village mothers from seeking medical help and intervention, was a lack of time, especially among working mothers. Other, non-working mothers seemed to resort to home remedies either because of the additional effort needed to take the child to the dispensary, or because of a lack of funds. Usually medical treatment was resorted to only if the traditional remedies had been tried and had not worked.

Some very categorically stated that they went, and would keep going, first to the *vaid* and then to the dispensary.

It was fairly interesting to note the attitudes that village mothers had towards *vaidyas*. They had a sort of near-faith or a near-belief, which entrenched the *vaidya* in a secure place in their belief system. While they believed that he could cure, they also believed that his cures were sometimes fairly ineffective. Despite this seeming contradiction, the *vaidya* was almost always the first resort. In a few instances there seemed to be almost some fear associated with the *vaidya,* making it seem almost blasphemous to even speak of him, either by name or activity.

Since *vaidyas* were a first resort, medical aid was not resorted to immediately, but rather after some time lag. The period of delay seemed to be dependent upon the perceived seriousness of the episode and the diarrhoea type. The following table is a synopsis of the relationship between these parameters.

Diarrhoea type	Seriousness	Time lag
With vomiting	Very serious	1 day
Without vomiting but high frequency	Fairly serious	2-3 days
With blood	Quite serious	2-3 days
With mucus/ordinary yellow	Not very serious	7-8 days

Seeking medical help was also dependent upon the ease of availability of doctor or some medical facility. The easier the access, the more probable that the child would be taken to the "dispensary" (regardless of the diarrhoea type). Going to a "dispensary" was seen to be a fairly expensive proposition and so was not resorted to as regularly or frequently as needed.

Most claimed that the doctors prescribed some tablets, liquids or injections but were unable to elucidate any further, i.e., they could not give the names. Some however, spoke of Erestoquin tablets, Chlorostrep capsules, Furoxone, and Kaltin. Some also spoke of glucose powder.

While most did have faith in doctors, some felt that the injections would kill the child, a fear probably born out of ignorance of remedies or an awe of doctors and hospitals.

This faith that was placed on doctors was probably because of the high success doctors were seen to have. When the child was taken at the last stages to the doctor, if he cured the child, the first overwhelming feeling was gratitude, further building up trust.

Most medicines which were prescribed were seen as anti-diarrhoeals, i.e., those which stopped diarrhoea, and also those which made the child look less dry and shrivelled up ("loose"). Some respondents spoke of anti-diarrhoeal powders, but did not know what they were.

There were some who mentioned that the doctor prescribed only liquids and said that food should be stopped altogether. From the section on "feeding", it seems as if this latter instruction was not faithfully observed.

Apart from tablets, injections, and liquids, the doctor usually recommended a light diet of both solids and liquids, such as:

hot, soft, cooked rice;
jaggery powder mixed in water; and
lots of water.

Some doctors recommended stopping food and/or stopping milk. However, mother's continued with their feeding practices, at most decreasing the quantity of food they gave.

2.8.3 Costs of Treatment

Short of free treatment, all costs would seem prohibitive. While some mothers spoke of private practitioners charging Rs.20-25, and felt that it was expensive, other less affluent persons felt that even 10 paise per injection was too costly. Some *vaidyas* seemed to dispense free treatment, asking at most for payment in kind. Usually a *vaidya* accepted the offering, e.g., milk, rooster, sheep etc., and after "blessing" it, returned it to the devotee to be fed to the child. While this was true of milk, it might or might not be true of the other offerings.

This gratis treatment might be a strong secondary factor which motivated the mothers use of this "doctor" and possibly strengthened their faith in him. This might also be a factor contributing to their near-belief, i.e., a faith which believed he could cure, but at the same time knew that he was fallible and therefore was needed definite in conjunction with fallback options like other health practitioners.

Since the use of medicines which were bought from the pharmacy has become a well-established pattern, and the concept of payment for medicines was now a familiar one, it was not very clear how a free ORS packet would be received and especially the credibility it would enjoy.

2.9 ORAL REHYDRATION THERAPY (ORT)

Awareness and use of ORT seemed to be fairly prevalent in Maharashtra. Though it was not known as such, it seemed to be practised widely among both mothers and doctors. Though dehydration was seen as a consequence of diarrhoea and rehydration was seen as a logical consequence, it did not seem to be given the importance it deserved. It was not seen as essential to the child's life and was treated only as one of the many things that needed to be done to manage diarrhoea.

2.9.1 Sugar Salt Solution (SSS)

The sugar salt solution was widely used all over Maharashtra. While most claimed to have heard of it through a doctor or their elders, some in the Ratnagiri and Bhandara districts claimed to have heard of it from the radio. The programmes mentioned in Ratnagiri were Vanita Mandal and Grihini,

two women's programmes which were broadcast in Marathi. In Bhandara respondents spoke of the programme broadcast on Thursday at 2.30 p.m. It is interesting to note that SSS seemed to be slowly acquiring the connotations and character of a traditional remedy, since it had already begun to be passed down by world of mouth or by seeing others give it to their children.

SSS was seen not only as a rehydrant but was perceived to be able to:

stop thirst;
keep the stomach clean;
cool the body;
decrease the frequency of motions;
rejuvenate the child;
increase energy levels; and
stop vomiting.

It was seen mainly as an anti-diarrhoeal, i.e., one which stopped diarrhoea, and also as a drink which got rid of the child's lethargy and inertia. It was also perceived as a *sherbet* because of its taste and so it was seen as both a treatment and a *sherbet*. Some said the doctor had told them it was a glucose substitute.

It was perceived to lessen thirst because of the sugar content. The mothers said that the sweetness of the water would make the child feel like drinking less water, and therefore felt that his thirst and motions would be reduced. Drinking a lot of water was felt by some to cause *panthari* which aggravated the condition. Sweet water was seen to lessen the child's intake of liquids and hence lessen the child's frequency of evacuation. This could imply that a "made-up" remedy has more credibility than plain water as a remedy for diarrhoea.

Some believed that it was better, i.e., more effective than plain water, because the salt helped the digestion of food and the sugar prevented thirst from increasing.

SSS was prepared in a variety of ways and occasionally with more ingredients than just sugar, salt and water, e.g., lime, jaggery, etc. Though the proportions were usually fairly accurate, in some cases the solutions were made up in an extremely dangerous fashion, i.e., with far too much salt, e.g., two spoons of water, plus one spoon of sugar, plus one spoon salt. Details of these different proportions are given later.

On the whole, SSS seemed to be well accepted and seemed to have permeated down to the grass root level. The only problems it faced were:

i. wrong preparation, which could exacerbate the diarrhoea
ii. image. Instead of being seen as essential for the child's life and as a remedy which had to begin with the onset of the episode, it was treated as just another anti-diarrhoeal.

However, though both these problems are fairly serious, they can probably be tackled through communication which should be designed to illustrate the right method of preparation and also to encourage the early use of SSS.

While speaking of the measures mothers used, a fair number mentioned spoons, though an equal mention was made of a pinch, a palmful, and a *lota*. The quantitative phase could perhaps be used to verify the understanding of the term "spoon" and to make a shortlist of the items available in the kitchen and the terminology for each. This may lead to a possible reproportioning which respondents could more easily remember.

2.9.2 Oral Rehydration Salts (ORS), Electral and Branded Electrolytes

Glucose was perhaps the most familiar name of ORS and was used interchangeably to mean glucose powder (since they claimed they got it in a carton) and Electral (as they referred to it by the colour of the packet.) The two important signs that mothers used to identify the various powders were the package and the product itself. The colour of the package (green or red) was noticed as was its shape and size. Similarly, the product was remembered by its taste, colour, and smell. The lemon smell was understood to be particularly distinguishable characteristic of the product. These sensory cues could perhaps be used in other such ORS packets to make them more memorable. A name also could help, as some mothers could remember the names of such products.

The commonest source of awareness of ORS was the doctor at the dispensary. Some claimed to have heard of it from "the lady in the Balwadi school", and others from the Anganwadi worker.

While most respondents were unfamiliar with the white UNICEF packet, some claimed to have been given it free by doctors.

ORS was usually prepared by mixing one spoonful of the powder in a glass of boiled water. Some also mixed a whole packet of powder with a litre of boiled water. This was then fed to the child a little at a time all through the day. It was believed to decrease the severity of the diarrhoeal episode, bind stools and ultimately stop the diarrhoea altogether. It was also in addition, believed to act in the following ways:

reduce vomiting;
give strength;
increase energy; and
keep the system cool. It was therefore seen as being similar to an orange *sherbet* which could be had in summer even by a healthy person.

One respondent claimed that her doctor had told her to give only this ORS mixture and to stop feeding the child any water.

Some mothers felt that the ORS packets provided a good, quick remedy and so should be used. The continual illnesses that children had were wearying for the mother and so she too seemed to look for a quick, effective remedy, which she believed was ORS.

Some mothers claimed to have been told by a doctor that SSS was a better remedy than "glucose water" as loose motions were caused by the latter.

The major ingredients in the ORS packets were believed to be lime and sugar. Beyond this they could not think of any others.

On the whole ORS (understood by most to mean only glucose) was thought to be an anti-diarrhoeal of some kind which also revitalized or re-energized the child. It was believed in, even by one whose child had died, and was thought to be fairly effective.

However, no one seemed to perceive it as a rehydrant of any kind. At best it was seen as a sort of water substitute. There did not seem to be any complaints regarding the availability of the product, with most claiming to get it from dispensaries or chemist's shops nearby (either in the village or in a nearby town).

3. HEALTH PRACTITIONERS

3.1 RESPONDENT PROFILE

In the four districts, a total of 28 interviews were done among health practitioners, with the following break up:

	No. of interviews
Anganwadi workers	3
PHC Workers*	8
MBBS doctors	12
Ayurved Practitioners	3
Homeopaths	1
Non-MBBS doctors	1
Total	28

The prevalence of qualified doctors was due mainly to their presence in Bhandara, where five of the sample of seven were MBBSs. Most of the health practitioners interviewed, had their practice in the town and only a few practised in the village proper.

Expectedly, health practitioners' attitude to and knowledge and perceptions of, diarrhoea differed as a result of their qualifications and experience. The more "aware" practitioners were the MBBSs and those who worked at PHCs.

Some of the ayurvedic practitioners practised both allopathy and ayurved, without any formal training in either.

3.2 CAUSES OF DIARRHOEA

Health practitioners seemed to feel that virtually anything could cause diarrhoea. Broadly the following causes, in order of "causativeness" seemed to emerge:

a. infected water;
b. inability of the child to digest food i.e., weak digestive system;
c. wrong food habits;
d. lack of hygiene and sanitation, i.e., general uncleanliness; and
e. teething.

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* constituting CHVs, MPPs, PHC health assistants and VHWs and other non-MBBSs

There seemed to be some difference of opinion among health practitioners with different qualifications. Those who held MBBS degrees seemed to be aware of a larger number of causes, especially those which seemed a little more scientific, e.g., bacteria, increased secretion of the intestines, etc. Frontline workers, such as Auxiliary Nurse-cum-Midwife, (ANMs), Anganwadi worker, Community Health Workers, etc. seemed to be at the opposite end of the spectrum. While they too had other reasons to explain the various causes of diarrhoea, these were not in the least "scientific", e.g., hot/ infected breast milk, spicy food, etc. They bore a strong similarity to mothers' beliefs. This is probably because they belonged to that area or village and had grown up with these beliefs instilled in them by their elders. Also, since they were, among all health practitioners, in closest contact with the villagers, their beliefs were further reinforced by the beliefs of the villagers. Homeopaths and Ayurvedic practitioners seemed to be somewhere in between.

Another major difference in beliefs of these three practitioner types was in the emphasis on what they believed to be the major cause. This is shown in the table below:

	Main causes
MBBS	Infected water/unsanitary conditions;
Frontline Worker	Breast milk/teething/ infected water;
Ayurvedic practitioners/ Homeopath	Infected water/indigestion.

Each of the five perceived causes is discussed below:

3.2.1 Infected Water

The water from rivers, ponds, and even wells was believed to be unhygienic, especially in the monsoon. While MBBSs spoke of bacteria, worms, and different viruses, other health practitioners, though not very clear as to what things in the water caused diarrhoea, believed very strongly that the water caused both vomiting and loose motions. While this was believed to be the major causative factor by all three practitioner types, mothers did not seem to find it as important. Water was believed to be the source of diarrhoea, dysentery, and cholera.

3.2.2 Weak Digestive System

Non-MBBSs strongly believed in this. They felt that a child did not have the ability to digest food in the manner in which an adult could, as it had a "delicate" digestive system, and hence was more prone to diarrhoeal disease. Indigestion was thought to be the result of overeating and was indicated by loose motions and the presence of gas in the stomach. Overeating was a phenomenon which was believed to occur in both neonates and older children. In the case of the former it meant that the child had consumed an excess of mother's milk.

3.2.3 Wrong Food Habits

This too was predominant among mothers' beliefs. Wrong food habits were believed to constitute the following:

eating stale or left over food;

eating 'open' food. Food from roadside stalls and uncovered food at home, were believed to be infected by flies, especially in the rainy season, when flies abound;
eating spicy or pungent food. If either the mother (if she was breastfeeding the child) or the child ate such food, a diarrhoea episode was believed to beset the child. A neonate was believed to pick up infection through the mother's milk which was believed to take on the characteristic of the food eaten, i.e, it became spicy or pungent;
certain food like fish were also thought to be causative agents, especially during the monsoon when the fish were believed to be infected. This was only mentioned in one of the coastal villages in Ratnagiri district and so was probably believed of only salt water fish.

3.2.4 Lack of Hygiene

This was mentioned only indirectly by mothers but was believed by health practitioners to be one of the primary causes of diarrhoea. Since the principal causative agent was believed to be dirt, they identified the various ways in which it could be introduced into the child's digestive system. These are given below:

lack of toilets causing people, especially children, to defecate anywhere;
hands not being washed properly before a meal, especially after the child had been to the toilet;
vegetables not being washed properly before being cooked;
a child eating mud and dirt while crawling on the floor, playing;
non-sterilized feeding bottles;
unboiled milk; and
nails having dirt/infection under them.

Flies were thought to be the primary harbingers of the disease and the faeco-oral route was felt to be a circle, completed with the help of the fly.

The disease was thought to spread from faeces or garbage or dirt, through the fly, to the food or water. Hence uncovered food, unboiled water, etc., were believed to be unhygienic.

3.2.5 Teething

This was a universally mentioned cause among practitioners and mothers. While the MBBSs postulated that diarrhoea was not in fact due to teething, but rather due to the dirt that children ate in an attempt to soothe their irritated, scratching gums, the others either quite frankly admitted not knowing the cause or believed it was due to a lack of calcium.

3.2.6 Miscellaneous Causes

Other causes mentioned were such as:

a change in the weather especially from summer to monsoon; as the air at the time was believed to carry infection;
the monsoon season when diseases, especially diarrhoea, abounded;
an offshoot of other diseases such as pneumonia, etc.;
general debility of the child;

from other children who had diarrhoea, as it was contagious; and cold weather, i.e., during winter.

3.2.7 Classification of Causes

Causes could be roughly classified into two kinds — traditional and modern. Traditional causes are those which are beliefs which practitioners are not sure of, but of which they believe they have heard others speak. Modern causes, on the other hand, are those which are not passed down by hearsay but are learnt from sources of authority and learning such as medical institutions, etc. Understandably, MBBSs believed more in modern causes than traditional ones. The factors, in which each of the three practitioner types believed, are listed below:

	Modern	**Traditional**
MBBS	Hygiene, Bacteria, infected water	Teething, food habits
Ayurvedic practitioner/ Homeopaths	Infected water, hygiene	Teething, food habits, seasonal changes
Frontline Workers	Infected water	Weak digestion, teething, breast milk

None of the health practitioners mentioned the "evil eye", except for an ANM who said villagers believed in it. The wrath of God was also believed to be a causal factor by them.

It should be noted that frontline workers were the ones who had the closest contact with villagers and also the maximum number of traditional beliefs. If such workers are to be used extensively, an effort needs to be made to re-orient their thinking so that they absorb their training well and are able not only to remember but to believe in it as well. Also, these workers could be used as good indicators of the success or failure of a programme, since they are in such close contact with the people.

Since a large chunk of mother's beliefs seems to be formed by hearsay and word-of-mouth, these workers could be used to disseminate information in that fashion. This would enable the newer remedies to become acceptable quickly.

3.3 ATTITUDES TO PREVENTION AND CURE

Almost all practitioners were of the opinion that diarrhoea could be prevented, bar one (an ayurvedic practitioner) who felt that no measures existed which could prevent diarrhoea. Among those who felt that diarrhoea could be prevented, some felt that the measures were purely theoretical, i.e., it would be very difficult to actually put them into practice.

Since the onset of the disease was mainly understood to be due to dirt entering the digestive system, prevention was understood as measures to stop dirt from entering the digestive system. These measures comprised the following:

boiling drinking water, purifying well or river water;

keeping food and water covered to prevent flies and other dirt falling on it;
eating only fresh food i.e., no leftovers from the previous day or food from various roadside stalls;
cooking light, bland food, i.e., food which had only a little oil and a little amount of spices.

Other measures suggested mainly by MBBSs and/or the frontline workers, had to do with personal hygiene, i.e., keeping clothes and nails clean, washing hands regularly with soap, especially after defecating, etc. To prevent recurrence of diarrhoea, the following measures were suggested:

putting faeces into a hole and covering them up. Some suggested that Dettol or phenol* should be sprinkled on top;
the patient should be isolated from others;
the child should defecate at some distance from the house;
anti-diarrhoeal or anti-cholera vaccines should be given; and
vaccinations against other diseases should be given to keep the child in a fairly healthy state.

The primary difference between practitioners and mothers lay in the extent of awareness. While most mothers were hazy about such measures, practitioners (including frontline workers) were quite knowledgeable. Also the latter were better acquainted with the concept than the former and hence more amenable to accepting new preventive measures.

Most practitioners claimed that some preventive measures (at least regarding recurrence) were followed by mothers. However this was probably more true of urban (town) mothers than village mothers, both of whom formed their clientele. The difficulty of following stringent preventive measures was appreciated, especially by town doctors. Resultantly, minimizing the occurrence of diarrhoea was felt to be extremely difficult. The problem was felt to be compounded by mothers' attitude to child care which is hypothesized to be one of indifference. This was postulated by practitioners as they realized that a working mother (who went to the field) had to leave her child behind at home and consequently denied the child of sufficient caring.

There was also some mention of a vicious circle being set up between undernourishment and a weak digestive system in which diarrhoea was said to form the intermediate link.

To illustrate: diluted milk was given so that the child's weak digestive system was not burdened. This in turn led to undernourishment which led to the weakening of the child. This was believed to set the stage for the attack of diarrhoea.

While mothers depended heavily on home made remedies and untrained practitioners like *vaidyas* for cures, practitioners believed only in "modern" medicine which was always allopathic. A gamut of remedies from anti-diarrhoeals to antibiotics were used, including electrolytes. While electrolytes were usually given in conjunction with some other medicine, in some cases they were given on their own, as a cure. However, this was fairly rare.

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* Two commonly used disinfectants

Frontline workers seemed to be the providers of only advice and at most electrolytes. Practitioners were left to prescribe, and in some cases even dispense, medicines.

While some doctors claimed to be interested enough in their patients to see if their advice was being followed, others claimed that their involvement ended with prescribing medicines. Those who felt they knew what their patients did claimed that they hardly listened to them and, after the child was well, went back to their old ways, and did not bring it back for further treatment.

3.4 TYPES OF DIARRHOEAL DISEASE

Diarrhoea has many names in both Hindi and English. A compendium of such names is given below, by district:

Name/District	Solapur	Nanded	Bhandara	Ratnagiri
Julabh	√	-	-	√
Atisaar	√	-	√	√
Hagvan	√	√	-	√
*Amvashya/*Amauns*	-	√	-	-
*Aav***	√	-	√	√
Green diarrhoea *(Modshi)*	√	√	√	√
Parsakade	-	√	√	-
Parsalu	√	-	√	-
Bagar	√	-	√	-
Aagkani	-	√	-	-
Sandaas	-	√	-	-
Dabba	-	√	-	-
*Patki****	√	√	-	-
Jhada/Zaad	-	√	-	-
Pykhana	-	√	-	-
Tati	-	√	√	-
Pachikiti				
Amoebic dysentery	√	√	√	√
Bacillary dysentery	√	√	√	√
Cholera	√	-	√	-
Moneliasis	-	-	√	-
Salmonella/Summer diarrhoea	-	-	√	-

* Usually used for blood dysentery
** Usually used for ordinary, sticky, mucus dysentery
*** Sometimes used for cholera

From the above table *atisaar* seems to be the commonest name for diarrhoea, not, however for mothers, among whom *julabh* was said to be the commonest name. The other common name was *hagvan*. While mothers mention *modshi* only in Solapur and Nanded districts, health practitioners mentioned it in the other two districts, Bhandara and Ratnagiri. This probably indicates that this name and type i.e., green diarrhoea, was more prevalent than other kinds. The other common word seems to be *parsakade*.

Definitions of these terms seemed to be a little more specific among health practitioners, especially among MBBSs. This is discussed below.

3.4.1 Classification of Types

Diarrhoea was classified differently by ayurvedic practitioners and non-ayurvedic practitioners. Though both classified it on the basis of the symptoms exhibited, the former spoke only of three symptoms, while the latter spoke of many more. The three elements in the body were classified, according to Ayurveda, as *vayu* (air), *pitta* (bile) and *rakta* (blood). Depending upon the element that was affected, symptoms such as gas in the stomach, water, stickiness or blood in the stool were exhibited.

Allopathic doctors and other health practitioners had two, broad classifications — diarrhoea and dysentery. Others classified diarrhoea on the basis of causes, consistency, or colour. Sometimes any one parameter could serve as an indicator of the diarrhoea type, and sometimes these parameters in conjunction with one another served as an indicator.

Looking only at causes, there seemed to be four diarrhoea types.

> due to teething — perceived to be very natural and mild;
> due to the monsoons. This type was usually dysentery of some kind, i.e., either amoebic or bacillary;
> due to coming in contact with infected areas of the body, e.g., Moneliasis was believed to occur when a woman scratched herself while having Leucorrhea and then touching her breasts or putting her unwashed fingers into the child's mouth; and due to worms in the water.

Also, diarrhoea was classified on the basis of the severity of the infection. Diarrhoea which was yellow, smelly, and very watery was called ordinary diarrhoea (*atisaar/jhada/julabh*, etc.) and was treated as being very mild i.e., not very serious. Diarrhoea, which had either mucus or blood (or both), was thought to be more serious as it indicated (as did the consistency of the stool) the degree to which the infection had spread. Often, the frequency of motions was also taken as an indicator of severity. Some perceived the most serious kind to be the one where urine was being retained in the body, showing the symptom of dehydration.

Some classified diarrhoea on the basis of the degree of dehydration evinced.

The first stage was usually known as mild dehydration and was thought to be a little more than the ordinary *atisaar* diarrhoea. The second stage was called moderate dehydration and the third, severe. In the last stage the patient would be unable to stand and urine was retained in the body. Perceptions and consequences of dehydration are discussed ahead.

Those who could distinguish easily between diarrhoea and dysentery types, defined each as follows:

a. Viral diarrhoea	:	Copious, watery stools accompanied by vomiting;
b. Bacterial diarrhoea	:	Copious stools with worms in them;
c. Dysentery	:	Scanty stools and pain before each motion, and the patient would have a feeling that his motion had not been adequate and matter was still left inside. Some also passed blood. Often the child cried before passing stools.
d. Cholera	:	Where the stool would be smelly, of any colour (white, green, or yellow), accompanied by vomiting.

Even in terms of classification and identification of different diarrhoea types, there seemed to be a difference among MBBSs and frontline workers. The latter usually had a narrower view and their classifications were restricted to simpler causes such as teething, indigestion, and cold weather and were rarely as complex as those of the former. MBBS classifications were done on the basis of the degree of infection, frequency of occurrence, dehydration, and "textbook" definitions of diarrhoea and dysentery.

3.4.2 Hypotheses Regarding the Different Diarrhoea Types

There seemed to be many ways in which diarrhoea was classified and these varied with the level of knowledge of the disease. Since the least knowledge was exhibited by frontline workers and non-MBBS practitioners, and since they were functional at the grass root level, they would probably need intensive education. While dehydration was clearly recognized by the MBBS practitioners, it was not mentioned at all by the others. This knowledge would therefore need to be instilled as they seemed to be the most crucial segment, in terms of dissemination of information.

3.5 DESCRIPTION AND SYMPTOMS

Diarrhoea was variously described as being yellow, watery and foul smelling, or with mucus and/or blood, or green. The symptoms that were exhibited are as follows:

stomach cramps, either before or during the attack;
fever;
vomiting;
quick/incessant motions;
weakness, i.e., an inability to get up and walk or talk, a pale drawn look;
stoppage of urine or very yellow urine;
sweating; and
bloated stomach, gas or wind-filled stomach.

Diarrhoea was thought to turn into dysentery, and entire attack lasting almost 10-15 days. In the initial 4-5 days it was just plain diarrhoea, i.e., loose, yellow, and watery. Subsequently it turned either bloody or had mucus in it.

Some spoke of diarrhoea which was incessant, i.e., did not cease. Others spoke of the kind which could not be felt, i.e., when the child defecated without knowing that it was doing so. This was perceived as fairly severe, since this constituted a continuous evacuation of stool and fluid.

3.6 CONSEQUENCES

The major consequences of diarrhoea were understood to be dehydration, usually called *grah* or *satvi*, and consequently death. Weakness was also thought to set in, making the child more prone to secondary infections. The child was usually described as very listless, tired, and pale. His appearance was described as follows:

sunken eyes;
sunken fontanelle;
wrinkled skin;
pinched face;
dry skin/mouth;
soft abdomen;
thin shrunken appearance; and
white, rolling eyes.

Other attendant consequences were believed to be the following:

cold limbs;
convulsions;
giddiness;
decreased urine output;
decreased salt and glucose content; and
a comatose or unconscious state.

Some practitioners believed that the death was also due to wrong diagnosis, and negligence from home. Others also spoke of the child's general condition and its environment. The unhygienic environment was believed to lead to a decreased resistance, which in turn led to more illness, vomiting, weakness, and finally death. Cholera was believed by some to be a causal factor as in this disease dehydration could occur very quickly, in the space of a day sometimes, and death could result very rapidly.

Some non-MBBS practitioners believed that in "teething diarrhoea", purported to be the commonest kind, death could never take place and the child would always remain healthy. Diarrhoea due to other causes, however, was believed to be able to become fatal.

Since practitioners were properly attuned to the consequences of diarrhoea, they claimed to be constantly watchful for signs of dehydration. Hence diarrhoea, in which a lot of body fluids were lost, i.e., where vomiting or evacuation of stools was incessant, was considered to be the most serious. Dehydration was believed to set in very quickly, almost overnight. Signs of dehydration (which could be either mild, moderate, or severe or terminal) were understood to be:

wrinkled skin;
sunken eyes;
feeble pulse (close to death);

loose stomach muscles;
ashen white skin;
dry tongue;
loss of elasticity of the skin;
state of shock;
cold, clammy limbs (extremities);
lack of movement;
giddy feeling;
lethargy, sleepness;
rolling eyes;
unconsciousness; and
sunken fontanelle.

The first indicators were the skin colour and the inactivity of the child. The last stages were indicated by skin texture, cold limbs, loss of skin elasticity, dry tongue, and comatose state.

Mild or moderate dehydration could be treated orally, while severe and terminal dehydration (when the tongue became dry) needed to have fluids administered intravenously.

3.7 FEEDING PRACTICES

While there was a distinct similarity between the beliefs of mothers and practitioners about the feeding which was required during diarrhoea, the latter's attitude towards mothers beliefs was quite derogatory. They believed that mothers were extremely negligent of their children, in that they did not pay adequate attention to a child's diet. A fairly strong feeling among practitioners was that mothers paid scant attention to their advice. They believed that she would listen carefully when confronting them face to face but when she went home would immediately fall back into her old routine. According to mothers however, the advice of the practitioner was followed to the letter.

The one belief that both groups, mothers and health practitioners, had in common, pertained to the digestive system. The system was believed to be weak at the time of a diarrhoeal episode and digestion was thought to be extremely poor. Empirical evidence such as the presence of food particles in the stool served to substantiate this belief. Resultantly, very "light" food, which did not strain or burden the digestive system, or a liquid diet, was recommended. The definition of these terms are provided later.

Some also spoke of:

a. giving food according to the child's digestive power and that in chronic diarrhoea, the digestive power of the intestines was lost. The intestines were believed to become weak, light, and soft, reducing the ability of the intestine to digest food and making the process much slower;
b. making the process of digestion easier by giving light and easily digestible food and by decreasing the quantity given.

Some believed that mothers stopped feeding the child milk and food, i.e., put the child on a semi-starvation diet. Some others believed that this was right and in fact recommended it to mothers as they felt, "the child can't digest it,

so why put pressure on the stomach?" Mothers on the other hand claimed that they never did so and always continued with a softer, lighter version of the normal diet in lesser quantities but at more frequent intervals.

There were a few practitioners who did not seem to believe in the concept of the weakening of the digestive system and hence said that the normal diet, in the same quantity too, should be given so as to ensure that the calories which were needed for body building were not lost.

3.7.1 Staple/Normal Diet

As cited by mothers, the staple diet consisted of barley, wheat, or rice. The most commonly used cereal seemed to be barley which was made into *chappatis*. This was usually eaten with:

dal (pulses);
vegetables;
eggs;
fish;
mutton;
amti (curry).

Rice seemed to be fairly infrequently used, as it was perceived to be a "light" food which could be given for illnesses. This corroborated the patterns cited by mothers.

3.7.2 Feeding During Diarrhoea

3.7.2.1 *Older children*

All food had to be light, soft, and easy to digest. A "light" food was believed to be non-spicy, non-oily, and to have a softer consistency than normal. Those practitioners who spoke of liquid diets, said that they believed mothers should convert all normal food into a liquid or semi-liquid form and then feed it to the child.

Of all the various foods that were believed to be suited to the invalid's constitution, the most popular was *maubhat* or soft, watery rice. Another fairly popular cereal was *sabudana* (sago) which was made either in the form of a *khichdi* (soft, semi-liquid preparation) or *kheer* (a milk-based sweet, liquid preparation).

A broad variety of vegetables from spinach to tomatoes and cucumbers was recommended. Boiled eggs, and other high-protein foods were also thought to be suited to a child's diet. Fruits, and *dal* in different forms (such as *amti*, *pej*, etc.) were also recommended.

Oddly, glucose biscuits were believed to be fed almost as a staple food.

Most food recommended seem to be fed to children, judging by the mother's responses. Food like boiled eggs, and spinach, and other such vegetables seem to be the ones left out of the mother's list. Food recommended and those fed are presented in an appendix.

Liquids which were recommended were either ORS (Electral or any other locally available brand of electrolytes) or SSS. Glucose was another highly recommended product.

Fluids available at home, which were recommended, were:

the water of split milk (whey);
rice water (*kanji*);
barley water (*ambil/pej*);
milk (diluted or plain);
lime water;
tea or coffee;
apple pulp in water;
soup (chicken or mutton);
dal water;
dahi (yoghurt); and
broth made from arrowroot powder (which has a very high starch content).

Since practitioners were very well informed about dehydration and its consequences, most stressed the importance of feeding liquids to a child with diarrhoea. It seems as if they were in fact trying to inculcate the habit of feeding liquids as they tried to recommend fluids which were of easy access to the mother. However, it was not equally evident whether they attempted to inform mothers about dehydration and therefore the necessity of administering a liquid diet.

3.7.2.2 *Neonates*

Most practitioners claimed to recommend the continuing of breastfeeding, with most maintaining that the quantity of breast milk should be reduced. The reasons cited for this practice were that breast milk was believed to be:

the most hygienic milk as it is free from germs and any other contamination. It is also believed to have the property of immunizing the child against other infection;
energy giving, thereby helping the child to regain strength and recoup from weakness;
easier to digest than "top" (cow or buffalo) milk;
beneficial to the lactating mother as it would prevent her from suffering any discomfort;
the only diet of an infant.

It went against their basic commonsense to starve an infant however small the duration, and hence breast milk was recommended to be continued.

There were some non-MBBS practitioners, e.g., Ayurvedic, who believed that the diet of the mother affected the infant's constitution and hence should be monitored with care. All food which were recommended for older children were believed to be equally applicable for mothers. The product of the effects of the diet was, of course, understood to be breast milk. This belief, identical to that of mothers, among such health practitioners further reinforced the mother's belief, which in turn reinforced that of the practitioners and so on. If this circle is to be broken and such beliefs changed, the attack would need to be two-pronged, with both practitioners and mothers being simultaneously worked upon.

Some other practitioners (both MBBS and non-MBBS) said that they did in fact recommend that the mother stopped breast feeding the child.

However, this was usually done only if the child had lactose intolerance, i.e., could not accept milk easily. One said that he recommended stoppage because breast milk generated too much heat in the child's body.

Interestingly, there were some who commented on the change in attitude that seemed to have taken place. They said that earlier the standard recommendation used to be to discontinue the practice of breastfeeding, while now it was to continue it. That this had in fact happened was corroborated by what mothers said. Recommendations of stopping breast milk seemed to have become fairly rare and almost outdated.

3.7.2.3 *Harmful food*

To both older children and mothers who were breastfeeding their children, the following items were regarded as taboo as they were believed to exacerbate the diarrhoeal attack:

fish;
mutton;
spices or spicy food;
"outside"/"top" milk, i.e., animal milk;
no high-protein food as these were believed to be difficult to digest (while some practitioners believed and recommended high-protein food others banned it from "diarrhoea diets");
oil/oily, fried food;
stale food; and
"outside" food, or food brought from restaurants or the roadside.

The major item that was completely banned, both by practitioners and by mothers, was spicy and oily food. As both groups believed that the child had a weak digestive system which needed "light" food, "heavy" food, such as oily or spicy food was completely dropped from the "dirrahoeal diet".

3.7.3 Post-diarrhoeal Feeding

Most said that no special diet needed to be administered to the child after the episode was over. They believed that the diarrhoeal diet, whether "high" food or "light" protein food, should be continued for a few days after the episode was over, probably so that the system could stabilize and the child could be slowly "weaned" on to a normal diet.

Only a few spoke of a vitamin-enriched diet such as one containing bananas, Protinex (a tinned powder), fruit juice, milk, and vegetables. They said that this diet should last for a period of 2-3 days after the episode was over.

3.8 TREATMENT

Health practitioners hardly ever recommended anything apart from antibiotics, anti-diarrhoeals and rehydrants. Home made remedies were never recommended and indeed, were little known. The only home remedies which were acceptable were the SSS and, among those who perceived it as such, ORS, such as Electral, etc.

3.8.1 Traditional (Including Home) Remedies

Practitioners were aware that they were used as a second, and in some cases, a last resort. They believed that the village women first tried many of their

herbal remedies at home. Only if they did not prove successful did they bring their children to the practitioner; often in the last stages of dehydration. God men and exorcists were also resorted to by some women. Propitiating a deity or exorcising the evil spirit or casting off the evil eye, usually needed the godman as a via media. Sacrifices of various animals and wearing "blessed charms" were believed to end the ailment. Some also spoke of a massage of the abdomen and joints with a medicinal preparation of betel leaves.

Apart from these, all traditional remedies had to be administered orally. Rarely food types, most remedies were those whose ingredients were slightly unusual or exotic, e.g., nutmeg, opium, *ghee*, turmeric etc. The kinds spoken of are listed below:

powdered pomegranate (skin);
khas-khas (deopiated poppy seeds) with nutmeg or *ghee* or milk;
rice water, plus sugar, plus salt;
arrowroot broth;
roasted lime with honey;
coffee; and
lime juice (similar to SSS).

Perhaps the most common remedy, judging by the frequency of mentions was the combination of deopiated poppy seeds, and nutmeg in either *ghee* or milk. All these remedies were believed to reduce the frequency of motions and improve the consistency of the stool to make it appear more normal.

The two traditional remedies which seemed to have been adopted to a marginal extent by health practitioners i.e., they either approved or recommended these, are:

a. the rice water, plus sugar, plus salt mixture; and
b. those containing opium.

Opium was believed by some practitioners to decrease intestinal mobility and hence reduce both the contractions and the frequency of motions. Rice water or *kanji* was a medium which mothers themselves were believed to use and view positively.

Some practitioners felt that there was a belief among certain villagers that water should not be given, as it would only lead to a swollen stomach. If this is in fact true, innovations with the existing home remedies (such as *kanji* forming the base for SSS) would be invaluable.

If remedies which are already being practised at home could be recommended by practitioners as useful in an episode of diarrhoea, it would probably be far easier to obtain the mother's co-operation in adopting rehydration methods. Since a person is always more amenable to a somewhat familiar entity than a totally strange one, such remedies might form points of entry for a rehydrant into village homes.

3.8.2 Medical Remedies

Medicines which were prescribed by practitioners were of all kinds — anti-diarrhoeals, anti-pyretics, anti-emetics, antibiotics and rehydrants. A list of these medicines is provided in the appendix.

The most commonly prescribed medicines were:

a. Kaolin — referred to as Bismuth-Kaolin, Pectin-Kaolin or just Kaolin. It was perceived to be a binder, in that it made the stool consistency more firm and thereby got rid of one of the major indicators of the disease — loose and watery motions;
b. Furoxone tablets;
c. Metronidazole tablets. These two tablets are believed to be able to fight the infection though these are not categorized as antibiotics. Furaxone is supposed to be Sulphur based;
d. ORS : Electral/Peditral, etc. This is discussed at length in the next section.

Antibiotics were prescribed only when the child was believed to have some infection in his stomach, as he would in the case of bacillary dysentery, etc. Usually identification of this type of diarrhoea was only possible after the stool sample had been analysed in a laboratory. However, some claimed to be able to identify it on sight and, on the basis of this diagnosis, prescribed antibiotics. The more common antibiotics seemed to be:

Chloromycetin/Chloramphenicol;
Chlorostrep;
Septran;
Terramycin;
Sulphaguanidine: to a lesser extent;
Gentamycin.

There did not seem to be a difference between drugs prescribed for children and those for adults, except in terms of the dosage.

Though the majority of medicines prescribed were allopathic, some non-allopathic medicines were also prescribed, such as:

Belladonna;
Jal Sanjivini (similar to ORS packets);
Kutajarishta.

PHC workers, i.e., Anganwadi workers, CHVs, etc., were not always able to recollect the names of the various medicines they were supposed to dispense. Hence different drugs were referred to by their colours and form e.g., the pink syrup or the red tablets. This could be because the names were unfamiliar and because the writing on the carton was only in English and not in Devnagri. This has implications on the packaging of ORS packets, i.e., they should be easy to identify with unusually bright and simple colours and if possible have both the instructions and the name of the medicine in the Devanagri script.

3.9 ORAL REHYDRATION THERAPY (ORT)

All practitioners advocated the oral rehydration therapy as an integral part of the management of diarrhoea. Awareness of both ORS and SSS was quite high and belief in the efficacy of both quite firm.

3.9.1 Sugar Salt Solution (SSS)

SSS was most often considered to be a home remedy and was almost seen in the same category as traditional remedies like opium, powdered pomegran-

ate seeds, etc. It was seen by some to be fairly downmarket and meant for poorer people, as they said that only if the patient had no money did they advise SSS. Also, using SSS was believed to be able to save money for the patient and that without cutting any corners if the diarrhoeal attack was mild. Apart from being cheaper, it was also thought to be less effective (by some) as it did not have all the salts of the ORS packets.

There was also a fairly strong opinion that SSS was only primary treatment or some kind of first aid and by some as a "saline" solution. One practitioner, an LMP, said that he never advised SSS as it was too incomplete and lacking in the vitamins, etc., that Electral possessed. Some perceived it to be the poor man's ORS.

It was usually prescribed in the initial stages of dehydration. It was perceived to :

decrease thirst;
decrease the frequency of motions;
maintain blood pressure;
prevent cramps by enhancing circulation;
prevent alkalosis;
replenish body salts;
correct salt imbalances (salt for sodium, sugar for glucose, and lemon for potassium);
correct the imbalance of the blood;
decrease the heat in the stomach;
decrease vomiting;
increase energy levels; and
replace the water in the blood.

Some thought it was very quick-acting, with its action being noticeable in half an hour if the dehydration was mild, and 2-3 hours if it was severe.

One practitioner, a homeopath, believed that the water and sugar decreased the heat of the stomach, and the salt prevented the child from vomiting. Some said that salt led to increased water absorption and hence increased the urine output.

Some practitioners experimented with SSS by adding different ingredients, such as lemon to enhance the taste, or substituting *kanji* for water, or by making up a combination of jaggery, sugar, salt and water.

While Anganwadi and other such ICDS workers were told about SSS at the PHC centres, other sources through which this message had been disseminated were medical newsletters such as "Medical Times" by Sandoz and lectures on medicine.

While most practitioners believed SSS was to be prepared with 1 litre of boiled water, a handful of sugar and a pinch of salt, some believed in slightly different proportions. One frontline worker said that the solution had to be boiled after it had been prepared. Some warned against incorrect preparation and feeding and said that an increased quantity would be harmful (how exactly, was not specified) and that increased quantities of the solution could induce vomiting.

The solution was recommended to be fed in teaspoonfuls till dehydration disappeared.

Interestingly, one PHC practitioner said that the Anganwadi system was

extremely effective since if one villager was told, she would spread it by word-of-mouth through the village. The remedy was believed to travel through the village like an epidemic. Judging from the mothers' relatively high awareness of SSS this may be true, as mothers claimed that their major source of information was doctors and Anganwadi workers, though sources such as friends and relatives were also mentioned.

3.9.2 Oral Rehydration Salts (ORS)

The ORS brands spoken of were Regolyte, Prolyte, Electral, Medilyte, Superlite and Amtral. Most were aware of the Government-supplied ORS packs and most PHC's claimed to have used them. While the frontline workers knew little or nothing about the ingredients in the packet, other practitioners spoke of salts such as Potassium, Sodium, Magnesium Sulphate, etc. One practitioner thought that the ORS packet must have a water purifier as it did not require the water to be boiled when being constituted.

Though most knew that it had more than just sugar and salt, there were some who did not know the other ingredients which went into it.

ORS was also perceived by some to be a home remedy but was not viewed in the same light as SSS. In terms of the perceived degree of sophistication, the hierarchy was as follows:

a. Branded ORS
b. Government ORS
c. SSS

Government ORS was perceived to be similar to branded ORS in terms of the composition of its ingredients but different in terms of its image, since it was supplied free.

ORS was usually given for moderate dehydration in conjunction with other medicines. Its action was perceived to be as follows:

to maintain water balance;
to prevent weakness of the stomach;
to give energy (it made the child look fresh again); and
to restore the salt balance.

ORS was dispensed either as the full packet or in small doses. One practitioner even claimed to force a woman to administer it. She was made to sit for two hours and was made to feed the baby two glasses of Electral in teaspoonfuls. Some believed that the constitution of ORS into liquid varied with the brand, e.g., Prolyte required 1 glass (200 cc) of water and Electral required less (160 cc).

Anganwadi workers said they were fairly miserly about distribution of the packets, and distributed it almost by the spoonful, because the packets were in very short supply. Supply was thought to be both irregular and inadequate.

One practitioner claimed that he had received complaints about ORS packets, i.e., it had led to the child vomiting. Subsequent to this complaint he only prescribed SSS, as he felt it was far safer.

On the whole, ORS seemed to be a very high-activity product and information about its use and action seemed to be fairly widespread. However the one obstacle to further use, as cited by practitioners themselves, seemed to be the attitude of the mother. She was reported not to take their advice seriously

enough, nor easily adopt new remedies. This might in fact be the case, as there seemed to be a wide gap between the two groups on the matter of ORT. Apart from influencing the mother, her pressure group too needs to be influenced. One practitioner claimed to call the parents-in-law, advise them first, before speaking to the mother of the child. Since villagers are believed to be an ignorant, superstitious, and heirarchy-conscious lot, such exploitation of the hierarchies is extremely innovative. Therefore, ways and means of enabling practitioners to put across these remedies effectively need to be discovered, along with some system of follow-up regarding the adoption of such measures by mothers.

4. MEDICAL RETAILERS

4.1 RESPONDENT PROFILE

Almost all respondents were located in the base towns.

Some of the retailers had fairly large shops and stocked a variety of goods, both medicinal and cosmetic, while others had relatively smaller shops with a limited stock. Some retailers stocked both allopathic and ayurvedic medicines but most stocked only allopathic ones. A list of such medicines is given in an appendix.

While some retailers held a B. Pharm diploma or degree, others were self-professed chemists. Their qualifications ranged from semi-literate (non-matric) to B.A./B.Com., i.e., qualifications in Arts and Commerce. Most of these felt that experience in this field of handling medicines was enough to allow them to run a shop.

4.2 CAUSES OF DIARRHOEA

The main cause of diarrhoea was perceived to be water, which was believed to be unhygienic and contaminated with bacteria and germs of various kinds. Different kinds of food were also believed to be causal factors — especially those which were either oily, i.e., deep fried, or left uncovered.

Other causes mentioned were:

worms;
teething;
indigestion;
fish (more so during harvest time);
heat from the summer harvest; and
new crop (difficult to digest).

Seasons in which this disease was believed to be particularly dominant were summer and the monsoons. Some said that because children ate dirt, their liver got damaged and brought on a diarrhoeal attack. Infections like cholera, were also thought to be a causal factor since diarrhoea and vomiting are attendant signs of this disease.

4.3 ATTITUDES TOWARDS PREVENTION AND CURE

While some believed that diarrhoea could not be prevented, there were others who believed that though preventive measures could be adopted, villagers would not adopt them. The preventive measures mentioned were:

drinking boiled water;
sterilizing feeding bottles;
keeping food covered; and
telling mothers to keep a track on their children's movements and, dissuade them from eating dirt and clay.

Retailers felt that their advice wasn't always taken very seriously and sometimes completely ignored, especially those regarding the preventive measures to be adopted.

A wide variety of cures was mentioned, especially anti-diarrhoeals like Pectin-Kaolin. Some retailers said they believed in recommending non-scheduled drugs as they were "safe" drugs, i.e., they had no harmful side effects. Others felt that they could even recommend scheduled drugs as they were very experienced and had handled such drugs often before. One retailer said that he advised mothers about practices they should follow, because he had "sympathy for the children".

Diarrhoea was understood to be a killer, especially of small children. Death was understood to be a consequence of dryness in the body, i.e., dehydration. Therefore, cure was also believed to be a process of rehydration, usually through branded electrolytes, such as Electral. However, this was perceived more as a second-stage cure in that it was thought to be used in the following manner:

Severe diarrhoea	:	Medicine + ORS
Moderately severe diarrhoea	:	Only ORS or only medicine
Mild diarrhoea	:	Nothing much

While rehydration was believed to be important, it wasn't an end in itself in that it was thought that only medicines could stop the evacuation.

4.4 TYPES OF DIARRHOEAL DISEASE

The two commonest diseases mentioned were diarrhoea and dysentery. Dysentery was thought to be of two kinds — amoebic and bacillary, sometimes with the presence of blood.

Retailers also classified diarrhoea into three kinds on the basis of the severity of the disease:

severe diarrhoea;
moderately severe diarrhoea; and
mild diarrhoea.

Diarrhoea from teething was usually believed to be mild, while diarrhoea with blood or diarrhoea during a cholera epidemic was believed to be fairly severe.

On the whole, diarrhoea was perceived to be a fairly serious disease and one which needed some care.

4.5 DESCRIPTION AND SYMPTOMS

Diarrhoea was described by the retailers in the same terms in which their patients described the disease to them. They spoke of various colours such as green, yellow, and red (because of blood) and consistencies, such as like liquid or watery and sticky. This latter type was due to the presence of mucus

in the stool, commonly referred to as *aav*.

Ordinary or mild diarrhoea was believed to be watery, yellow, and of short duration. Other diarrhoea types were those with attendant symptoms such as vomiting or the excretion of blood and mucus. Some also spoke of a loss of appetite.

4.6 CONSEQUENCES

Most retailers were aware that dehydration was a consequence of diarrhoea and death was the end result. One said that the water and the salts from the body were evacuated during diarrhoea. The symptoms which indicated the onset and increasing severity of dehydration were:

dry tongue;
sunken eyes;
big stomach;
thin, stick-like arms and legs; and
dry, loose skin.

One retailer said that the intestines, i.e., the inside of the stomach, shrank and dried up as a consequence of diarrhoea.

Death was believed by some to be a result of ignorance and wrong treatment, apart from dehydration.

4.7 FEEDING PRACTICE — ADVICE GIVEN

Retailers were fairly free with their advice, especially regarding the child's diet or that of the feeding mother. Food (and liquids) that were believed to be beneficial during diarrhoeal episodes were:

pej (gruel from rice);
cow's milk;
nimbupani (lime water);
fruit juice;
coffee;
curd rice;
hot water and lime;
plain boiled water;
ghee rice;
any high-protein food; and
any liquid food.

Some even recommended herbs which increased the flow of the mother's milk.

There was a belief that during diarrhoea the child's system was strained and therefore should not be burdened with "heavy" food, e.g., food which was oily or pungent. A "light" diet was believed to be one which was soft and bland. This perception was the same among mothers and health practitioners.

Food that mothers were told to avoid were those such as:

oily food;
pungent food;
palm oil;

outside food;
outside milk (cow's milk, etc.);
chappatis; and
non-vegetarian food.

Some said that they restricted the milk intake of the child, as milk sometimes did not agree with the child's constitution. Some said that milk bred the germs of dysentery. On the whole, retailers recommended a reduction in the quantity of milk being given. Some said that neonates should be given less breast milk or milk from outside. Others who restricted the milk intake of elder children said that it should not only be fed in lesser quantities but also diluted.

4.8 TREATMENT : ADVICE GIVEN

Medicines were thought to be harmful for small children. Hence, most retailers usually recommended non-scheduled drugs,i.e., those which could be sold without a prescription. This was because they felt that small children were too delicate to experiment upon, that unless absolutely the right dosage was given, the child might be badly affected. They claimed that doctors prescribed both anti-diarrhoeals and Electral powder. The fastest moving medicine, i.e., the one which sold most, was Pectin-Kaolin.

While most retailers were careful about the kind of drugs prescribed and preferred playing safe by sending patients to a doctor or by recommending drugs they perceived to be harmless, some retailers confidently gave villagers every kind of drug. This latter type of retailer believed that his familiarity with these drugs, which was borne out of long experience in handling such things, put him on par with other chemists who were qualified (D.Pharm.) to practise pharmacy.

Retailers who stocked both allopathic and ayurvedic drugs, recommended both types. Again, ayurvedic drugs which were recommended were very mild, as they believed that the child might not be able to tolerate stronger ones.

Electral, Superlite, etc., were widely recommended and almost every chemist claimed to stock it. Some believed that Electral and other such electrolytes constituted, along with SSS, home remedies. Most did not know the practices mothers followed at home.

However, some spoke of the following:

crushed onions (anti-emetic action);
opium (to stop loose motions);
nutmeg, saffron, nuts, caraway, and *maipal* ground and mixed in a teaspoon of mother's milk. Nuts were believed to be good for the brain and to keep the child cheerful;
harda for gas trouble;
sabudana and *khus-khus* (deopiated poppy seeds) mixed together; and
gulkand (rose petals mixed with sugar).

Some said that mothers wanted a quick remedy as they were especially scared of loose motions and vomiting. Also, mothers were thought to occasionally ask for medicines with which they were familiar. One name mentioned was Chlorostrep, and another spoke of Septral, which mothers identified not by the make but rather with the picture of a child on a blue bottle. Septral was used for fever and coughs.

4.9 ORAL REHYDRATION THERAPY

This was called 'Electrolite therapy' by some and was believed to be of essence in treating diarrhoea, and was practised by both retailers and health practitioners.

4.9.1 Sugar Salt Solution

A fair number of retailers were aware of SSS but many more were aware of Electral and other such eletrolytes. The proportions of sugar and salt used are given in an appendix.

SSS was thought to work as an anti-diarrhoeal, to stop loose motions, rather than as a rehydrant.

Sources of awareness were mainly 'the government' i.e. workers at govt. health centres such as the PHCs, etc. Also advertisements at bus stops and on walls were believed to be sources.

SSS was rarely advised as a single treatment, on its own. It was usually given along with other medicines.

SSS was perceived, by some who were unfamiliar with it, to be a sort of ayurvedic remedy indicating that retailers shared practitioners' views on the image of the product. They said ayurvedic doctors would advise SSS, while allopathic doctors would advise ORS.

Some said they would not advise SSS since, if they did so, their sales of Electral, etc., would decrease and would affect their profits. Most, of the few who did know about SSS, did not feel this way. Hence, if retailers were used as a means to promote the use of SSS, they might prove fairly effective.

4.9.2 ORS : Electral and Other Branded Electrolytes

ORS was stocked and was propagated by virtually every retailer. Retailers who stocked Ayurvedic medicines were usually not aware of Electral and naturally did not stock it. Being aware of dehydration, they recommended it both when the patient had not yet visited the doctor and even afterwards, in the latter case, only if the practitioner had forgotten to prescribe it. It was not seen as very popular. Retailers said that hardly any one asked for it of their own accord. It was given to them only by doctors and, in some cases, by the retailers themselves. Electral was seen as a fairly upmarket product. Its action was believed to be as follows:

> removing weakness, re-energizing, revitalizing, strength giving;
> replacing lost salts in the body;
> for general digestion problems;
> for relief from diarrhoea;
> to treat "summer stroke"
> to energize, if taken after a day's hard work; and
> as an anti-emetic.

It was thought, by one retailer, to be a kind of food, as it was to be fed to the child to rid it of weakness.

It was understood to contain sodium chloride, magnesium, soda bicarbonate, lime and potassium chloride. Some were unsure of its ingredients and said that it could have some kind of edible soda in it. One retailer said that it was a glorified version of SSS because, it had more than just sugar and salt.

Similar other powders meant for rehydration were named as Superlite, Waylite, etc.

Some said that they advised Electral only in the moderate or severe cases of dehydration and believed that it provided immediate though temporary relief.

Electral was seen by some to be a support medicine of some kind since it was always given in conjunction with some medicine for diarrhoea. It was used in isolation if it was being used as a food substitute or if it was used as a glucose substitute, i.e., as a refreshing summer drink.

Electral solution was usually made up with one spoon in one glass of water and its taste was likened to that of a *sherbet* (a refreshing sweet drink). During diarrhoea this solution was advised to be given two teaspoonfuls at a time, all through the day. Proportions of Electral to water varied quite a lot. While some said two spoonfuls should be added to a glass of water others spoke of one spoonful in a cup of water.

Most retailers had not seen the government ORS packets. On being shown it they felt it was fairly similar to Electral. However it seemed to have a weaker image, as some retailers felt that Electral was "stronger" and more "powerful" in terms of its ingredients and hence its action was versatile enough to be used as a '*sherbet*' in summer to cool the body.

5. APPENDICES

APPENDIX A

Statistics of Population, Industry, and Agriculture for Bhandara District

	Total	Rural	Urban
Population (millions)	1.80	1.57	0.23
%	100	87	13

Industry	Product	Sales (Rs.crores)
Units in operation:		
Ashok Leyland, Bhandara	Medium/heavy duty vehicles	28.00
Simplex Mills, Gondia	Paper products	Commissioned in September 1983
Universal Ferro & Allied Chemicals, Tumsur	Ferro-manganese	7.96

Agriculture	Area*	Production** (1982-83)
Rice	291	254
Wheat	29	18
Jowar	31	16
Gram	10	4
Groundnut	1	1

Solapur District

	Total	Rural	Urban
Population (in millions)	2.6	1.85	0.75
%	100	71	29

Industry	Product	Sales (Rs.crores)
Units in Operation:		
Bharat General Textile, Dhamagaon, Malkapur	Oil and oil cakes	13.04
Brima Sugar, Shreepur	Sugar	5.28
Jam Shree Ranjisonghji Spg & Wvg, Solapur	Cloth, Yarn	17.26
Laxmi Vishnu Textile Mills, Solapur	Cloth, Yarn	34.82
Maharashtra State Handloom Corpn, Solapur	Handloom cloth	2.81
Maharashtra State Textile Corpn, Solapur	Cloth, Yarn	13.16

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* Area in '000 hectares

** Production in '000 tonnes

Industry	Product	Sales (Rs.crores)
Maharashtra Sugar Factory, Solapur	Sugar	7.00
NTC Ltd (Maharashtra North), Bansi	Yarn	0.67
Shivaji Works, Tikekarwadi	Cast iron, castings	10.49
Sinnar Bidi, Solapur (4 units)	Bidi	2.40
Yeshwant Sahakari Sakhar Karkhana, Akaluj	Sugar	9.39

Agriculture	Area*	Production** (1982-83)
Jowar	803	151
Tur	28	10
Wheat	26	35
Bajra	34	5
Safflower	62	24
Sugarcane	24	2780
Groundnut	17	12
Cotton	11	17***

Nanded District

	Total	Rural	Urban
Population (millions)	1.7	1.38	0.32
%	100	81	19

Industry	Production	Sales (Rs.crores)
Units in operation:		
Bombay Dyeing & Mfg Co, Nanded	Gunning & Pressing Factory	....
Maharashtra Agro-Industries, Nanded	Granulated Fertilisers	8.28
NTC (South Maharashtra), Nanded	Cloth, Yarn	0.96

.... included in the company's main works located elsewhere

Agriculture	Area*	Production** (1982-83)
Jowar	289	394
Rice	35	25
Wheat	40	29
Tur	41	22
Cotton	216	178(a)
Groundnut	6	4
Sugarcane	9	796
Mesta	7	13(b)

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* Area in '000 hectares
** Production in '000 tonnes
*** Production in '000 bales of 170 kg each
(a) Production in '000 bales of 170 kg each
(b) Production in '000 bales of 180 kg each

Ratnagiri District

	Total	Rural	Urban
Population (millions)	2.10	1.93	0.17
%	100	92	8

Industry	Product	Sales (Rs. crores)
Units in operation:		
Maharashtra Agro Industries, Kasarade (Sindhudurg)	Agricultural implements	0.30
Narmada Cement, Ratnagiri	Cement	4.40
National Organic Chemicals, Lote Parshuram, (Chiplun)	Agrochemicals	4.57
Raymond Woollen Mills Ltd, Ratnagiri	Files and rasps	1.07
W.G. Forge & Allied Industries, Kudal Pinghli (Sindhudurg)	Machinery crank-shafts	4.01

Agriculture	Area*	Production** (1982-83)
Rice	81	137
Ragi	38	34
Sesamum	3	2
Sugarcane	-	-

* Area in '000 hectares
** Production in '000 tonnes

APPENDIX B

Information about Villages

	Bodhadi BK	Lakhmapur	Jamb	Palora	Tarapur	Umbre	Bardi	Tide	Velas
Existence of village health/anganwadi/ frontline workers	*	*	*	*	*	*	*	*	-
No.of frontline workers	9	1	5	7	4	4	5	1	-
Existence of electri-city for agriculture/ irrigation	*	*	*	*	*	*	*	*	*
No. of users	45	40	100	78	80	6	12	-	8
Existence of electri-city for lighting	*	*	*	*	*	*	*	*	*
No. of users	200	100	300	85	40	7	10	200	285
Existence of flour mill/chakki	*	*	*	*	*	*	*	-	*
No. of flour mills/chakkis	5	2	3	2	3	2	2	-	3
Existence of radio receivers	*	*	*	*	*	*	*	*	*
No. of sets	500	25	350	144	275	325	20	N.S.	200
Existence of TV sets	-	-	*	*	-	-	-	-	-
No. of sets	-	-	6	2	-	-	-	-	1
Existence of provision stores	*	*	*	*	*	*	*	*	*
No. of stores	16	4	5	2	5	4	4	1	3
Existence of medical Stores	*	-	-	*	-	-	-	-	-
No. of medical stores	1	-	-	4	-	-	-	-	-

* Implies facility exists; - Implies facility does not exist

	Bodhadi BK	Lakhmapur	Jamb	Palora	Tarapur	Umbre	Bardi	Tide	Velas
Total no. of houses	800	N.A.	340	298	300	440	250	100	350
Kuchha houses	300	-	170	149	280	40	200	30	88
Pucca houses	500	-	170	149	20	400	50	70	262 (kuchha/ Pucca)
Estimated									
Total population	6300	2000	3015	1569	2000	1761	1500	2000	1700
No. of voters	3200	1200	1692	1109	1100	978	872	783	749
Caste	%	%	%	%	%	%	%	%	%
Hindus									
Brahmin/upper class	2	-	-						
Landowning farmers	5 marathi	-	20 Kunbhi						
Non-landowning farmers)	30	30 Mali	-						
Trader class)	koli	-	-						
Untouchable/Harijan	15	-	20	25	NA	NA	NA	NA	NA
Bhanjari	30	60	-	-					
Others	8	10	70	50					
Dispersal of Caste	There used to be sep-erate wadi but now they have integrated	2 bastis 1 bhanjari and 1 Mali each	Separate harijan wadi	Separate harijan wadi	Separate harijan wadi, muslims live near canal	Maratha & harijan in sepera-te places but close to each other. Difficult to diff-erentiate	Separate harijan wadis rest all together	Not specified	Dalit have separate areas

	Bodhadi BK	Lakhmapur	Jamb	Palora	Tarapur	Umbre	Bardi	Tide	Velas
Facilities Existing in Villages									
Cooperatives (artisans, dairy products etc.)	*	*	*	*	*	*	*	*	*
No. of cooperatives	1	1	1	2	1	2	2	1	1
Existence of schools for children	*	*	*	*	*	*	*	*	*
No. of schools	3	1	2	1	1	1	2	2	2
Existence of schools for adults	*	*	-	-	*	*	*	-	-
No. of schools	2	4	-	-	1	-	1	-	-
Rain									
During monsoon									
None	-	-	-	-	-	-	-	-	-
Very little	-	✓	-	-	✓	✓	✓	-	-
Enough	✓	-	✓	-	-	-	-	✓	✓
Area prone to floods	-	-	-	-	-	-	-	-	-
During winter									
None	-	✓	-	-	✓	✓	✓	-	
Very little	✓	-	✓	✓	-	-	-	-	-
Enough	-	-	-	-	-	-	-	✓	-
Water sources for drinking water									
Wells	100	100	15	8	-	2	3	12	25
Hand pumps	1	-	1	1	1	8	8	-	2
Tubewells	-	-	1	-	1	-	-	-	-
River	-	-	-	-	1	-	-	-	-
Pond	-	-	-	-	-	-	-	-	-
For agriculture									
Wells	20	40	150	78	80	44	100	-	50
Hand pumps	-	-	-	-	-	-	-	-	-
Tubewells	-	-	-	-	-	-	-	-	-

	Bodhadi BK	Lakhmapur	Jamb	Palora	Tarapur	Umbre	Bardi	Tide	Velas
River	-	-	-	-	1	1	-	2	-
Pond	-	-	1	-	-	-	-	-	-
Tap	-	-	1	-	-	-	-	-	-
Canal	-	-	-	-	1	1	-	-	-
For home use									
Wells	-	-	15	8	-	2	-	-	-
Hand pumps	-	-	-	-	-	8	8	-	-
Tubewells	-	-	-	-	-	-	-	-	-
River	1	-	-	-	1	1	-	-	-
Pond	-	-	-	1	-	-	-	-	-
Where water sources located	In and around the village	In the village	In and around the village	In and around the village	In and around the village	In and around the village	In and around the village	River cuts across one end of the village, and wells	Private wells are in some plots, and four public wells
Where salt obtained from	Provision stores	Provision stores	Provision stores	Provision stores	Provision stores	Provision stores	Provision stores	Kumble/ Provision stores	Provision stores
Type of sugar/ obtained from									
Sugar Jaggery	Ration & Provision stores	Ration & Provision stores	Ration & Provision stores	Ration & Provision stores	Ration & Provision stores	Ration & Provision stores	Ration & Provision stores	Ration & Provision stores	Ration & Provision stores

	Bodhadi BK	Lakhmapur	Jamb	Palora	Tarapur	Umbre	Bardi	Tide	Velas
Where chemist located	Local medical store	Mahur	Medical store Mahadi	Konda Adyal Pawni	Pandhar-pur	Sub PHC in village, PHC & Medical store Gaitamb	Modnimb	Kumble	Veshvi Srivardhan Dapoli Mandangarh
Nearest anganwadi/ PHC location	Primary health guide in town	In the village itself	In the village itself	Ajgaon	In the village itself	In the village itself	In the village itself	Gramrak-shak in the vill-age itself	Mandangarh
Frequency of visits	N.S.	Lives in same village	Lives in same village	Once a week	Lives in same village	Lives in same village	Lives in same village	N.S.	Not at all
Where nearest hospital located	College Hosp. Kinivat, Govt. Hosp. Nanded	Yavatmal	Mohadi	Kendai	Pandhar-pur	Akluj	Modnimb	Mandan-garh	Mandangarh Health Centre
No. of medics/ Type of medics									
Private doctor	3	-	1	-	-	2	-	N.S.	-
Govt M O	2	-	-	-	-	-	-	-	-
Vaid/Hakim	4	-	-	-	-	-	-	-	-
Multipurpose worker (first aid)	-	1	-	-	-	-	-	-	-
Indigenous Health Practitioner	-	1	-	-	-	-	-	-	-
PHC location	-	-	1	-	-	-	-	-	-
Aurvedic doctor	-	-	-	1	-	-	-	-	1
Sub-PHC	-	-	-	-	1	-	-	-	-

	Bodhadi BK	Lakhmapur	Jamb	Palora	Tarapur	Umbre	Bardi	Tide	Velas
Visiting doctor	-	-	-	-	4	-	-	-	-
Nurse	-	-	-	-	-	1	-	-	-
ANM	-	-	-	-	-	-	1	-	-
Allopathic doctor	-	-	-	-	-	-	-	-	1
Disposal of household garbage	Outside each house & at end of each lane	In compost pits near house	In compost pits near house	Outside the village	Individual family pits outside the village	Outside the house, in heaps or pits & also in compost pits	In pits near house	Only 1 toilet under construction	Compost trenches (Individual/Pvt)
Transportation modes									
Base Town	Train, state bus, trucks	State bus, pvt trucks	State bus, trucks	State bus, trucks	State bus, tempos	State bus, during monsoon walk to Karkamb for bus	State bus, trucks, Matador vans	Bus	State bus, tempos, trucks
Other village	State bus	State bus/pvt trucks	State bus, trucks & bullock carts	State bus trucks	State bus tempos	State bus	State bus trucks	Bus	State bus, tempos & trucks
No. of roads to the village	1	1	6	3	2	4	1	1	1

	Bodhadi BK	Lakhmapur	Jamb	Palora	Tarapur	Umbre	Bardi	Tide	Velas
Main crops of the village	Cotton	Cotton	Rice	Rice	Jawari	Jawari	Jawari	Rice Nachni, Mango, Cashew-nut	Rice, Supari, Coconut Mango
Other crops of the village	Wheat, Paddy, Jawari	Jawari, Wheat	Sugar-cane, Banana, Potato, Vegetables	Wheat, Urad dal, Jawari, Groundnut Sugarcane Onion	Sugar-cane, Cotton, Onion, Chillies, Wheat, Corn	Wheat, Harbara, Ground-nut, Sugar-cane, Sunflower	Kardi, Sugar-cane, Cotton, Onion, Wheat, Chillies Banana	Not specified	Mangoes
Type of fruits/season in which grown									
Guava	Winter	-	Winter	Not Specified	-	Winter	-	None grown	-
Ber	Winter	-	-	-	-	-	-	-	-
Orange	Summer	Summer	-	-	-	-	-	-	-
Bananas	-	All the year	Summer	-	-	Summer	-		All seasons
Papaya	-	All the year	-	-	-	-	-	-	-
Apples	-	Winter	-	-	-	-	-	-	-
Grapes	-	Winter	-	-	Winter	Winter	Winter		-
Lime					Winter	-	-		-
Pomegranate					Winter	-	-		-
Mangoes							-		All seasons
Supari							-		All seasons

Type of vegetables/ season in which grown	Bodhadi BK	Lakhampur	Jamb	Palora	Tarapur	Umbre	Bardi	Tide	Velas
Dhudi	N.A.	-	-	-	-	-	-	-	-
Cabbage	-		-	-	-	-	Summer	-	-
Tomatoes	-	Not specified	Summer	-	-	-	Monsoon	Not Specified	Winter Seasonal
Brinjal	-		-	-	-	-	Summer	-	-
Leafy vegetables	-		Summer	N.S.	Not specified	Through out the year	Monsoon		
Potatoes	-	-	Winter	-					
Chillies	-	-	Summer	-	-	-	-	-	-
Beans	-	-	-	-	-	Through out the year	-	-	-
Ladies finger	-	-	-	-	-	-	-	N.S.	-
Radish	-	-	-	-	-	-	-	-	Winter
Cereals/season in which grown									
All pulses	N.S.	N.S.	All the year(winter harvest)	N.S.	-	-	N.S.	N.S.	-
Usual ones	-	-	-	-	N.S.				
Dal	-	-	-	-	-	July to Dec	-	-	Throughout the year
Moong	-	-	-	-	-		-	-	
Tur	-	-	-	-	-		-	-	
Matki	-	-	-	-	-		Not specified	-	
Masur	-	-	-	-	-			-	
Existence of untouchability	No	No	No	No	No	No	No	No	Throughout the year Not applicable
Presence of market	Yes	Yes	Yes	Yes	Yes	Yes	Yes	No	No

APPENDIX C1

Information from Mothers

	Tide	Velas	Jamb	Bardi	Bodhadi	Lakhmapur	Umbre	Palora	Tarapur
No. of joint families	9	6	3	2	4	5	8	6	11
No.of adults:									
1-2	-	-	-	-	-	-	-	-	-
3-4	3	2	2	1	1	5	2	3	1
5-6	5	1	1	1	3	-	-	2	-
7-10	1	1	-	-	-	-	-	1	1
11+	-	2	-	-	-	-	-	-	-
Not specified	-	-	-	-	-	-	6	-	9
No. of children:									
1-2	2	2	1	-	-	1	1	2	-
3-4	3	2	2	1	3	2	-	3	1
5-6	3	1	-	1	1	1	1	1	1
7-8	1	-	-	-	-	-	-	-	
9-10	-	-	-	-	-	1	-	-	-
11-15	-	1	-	-	-	-	-	-	-
No. of single unit family	3	5	14	8	12	9	3	9	3
No. of adults:									
1	-	-	-	1	-	-	-	-	
2	1	5	8	3	2	2	3	6	3
3-4	2	-	6	4	3	-	-	3	-
5	-	-	-	-	-	1	-	-	-
Not specified	-	-	-	-	7	6	-	-	-

	Tide	Velas	Jamb	Bardi	Bodhadi	Lakhmapur	Umbre	Palora	Tarapur
No. of children:									
1	-	3	3	3	-	2	-	2	-
2	-	1	3	1	-	1	1	1	1
3	1	1	3	3	2	-	2	4	-
4	1	-	4	-	1	-	-	1	1
5	-	-	1	1	1	-	-	1	1
6	1	-	-	-	1	-	-	-	-
Average no. of children/respondents									
No. of respondents	12	11	17	10	16	14	11	15	14
1	1	3	3	4	2	4	1	4	6
2	3	3	4	1	3	2	5	3	4
3	6	1	4	3	6	5	3	5	1
4	2	3	5	1	3	-	2	2	2
5	-	-	1	1	1	1	-	1	1
6	-	-	-	-	1	1	-	-	-
7-11	-	1	-	-	-	1	-	-	-
No. of children aged 2 yrs:									
1	8	6	9	6	10	10	7	14	12
2	-	-	-	-	-	-	1	-	1
No. of children aged 2-5 yrs									
1	13	6	12	7	9	9	7	10	8
2	-	2	3	-	2	3	2	1	1
3	-	-	-	-	1	-	-	-	-
Not specified	-	-	-	-	-	-	1	-	-
Children aged above 5 yrs									
1	8	4	9	3	12	4	6	6	4

	Tide	Velas	Jamb	Bardi	Bodhadi	Lakhmapur	Umbre	Palora	Tarapur
2	2	3	6	4	2	2	-	1	1
3	-	1	-	-	1	2	-	-	-
4	-	-	-	-	1	1	-	1	-
6	-	1	-	-	-	-	-	-	-
Illness of children up to 2 yrs									
Respondents having children up to 2 years	8	6	9	6	10	10	8	14	13
Illness									
Diarrhoea	4	4	5	-	3	10	-	5	6
Dysentery	-	-	4	5	4	2	3	2	3
Cholera	-	-	-	-	1	-	1	1	-
Cold/cough/fever	3	4	7	5	6	9	2	11	8
Chicken-pox	-	-	-	-	-	1	-	1	2
Others	-	1	2	1	3	6	2	-	-
Illness of children aged 2-5 years									
Respondents having children aged 2-5 yrs	13	8	15	7	12	12	10	11	9
Illness									
Diarrhoea	11	7	8	-	6	5	2	9	3
Dysentery	-	-	6	6	5	2	4	2	6
Cholera	-	1	2	-	1	-	-	1	-
Cold/cough/fever	8	8	10	5	6	2	2	11	6
Chicken-pox	-	-	1	-	-	2	-	2	3
Others	1	-	4	2	10	3	1	3	2

	Tide	Velas	Jamb	Bardi	Bodhadi	Lakhmapur	Umbre	Palora	Tarapur
Occupation of respondents									
All respondents	12	11	17	10	16	14	11	15	14
Working	9	-	7	8	13	4	5	11	13
Non-working	3	11	10	2	3	10	2	4	1
Not specified	-	-	-	-	-	-	4	-	-
Kind of work									
Working respondents	9	-	7	8	13	4	5	11	13
In the fields	8	-	4	6	13	4	5	9	13
Tend to care/ feed live stock	-	-	-	-	-	-	-	-	-
Others	1	-	3	2	-	-	-	2	-
No. of hours spent working in, the fields									
Up to 4 hours	-	-	-	-	-	-	-	1	-
Up to 6 hours	4	-	-	-	-	-	-	1	4
Up to 7 hours	-	-	-	-	1	-	-	1	-
Up to 8+ hours	1	-	-	-	4	-	-	3	-
Not specified	3	-	4	6	8	4	5	3	9
Care of children									
Working respondents	9	-	7	8	13	4	5	11	13
Take all children along	-	-	-	6	2	-	1	-	11
Take only younger kids along	-	-	-	-	-	-	-	-	-
Leave all behind with someone	8	-	4	1	1	1	-	8	2
Leave all behind alone	1	-	3	1	9	3	4	3	-
Not specified	-	-	-	-	1	-	-	-	-

	Tide	Velas	Jamb	Bardi	Bodhadi	Lakhmapur	Umbre	Palora	Tarapur
Type of house									
All respondents	12	11	17	10	16	14	11	15	14
Kuchha	11	5	6	8	7	8	2	7	9
Pucca	1	6	2	-	-	-	2	2	-
Kuchha/Pucca	-	-	8	1	9	6	3	6	-
Not specified	-	-	1	1	-	-	4	-	5
No. of rooms									
1	2	1	3	9	8	3	3	4	6
2	9	4	5	-	5	9	3	6	3
3	1	3	4	-	3	2	-	3	-
4	-	1	4	-	-	-	-	1	-
5+	-	2	-	-	-	-	-	1	-
Not specified	-	-	1	1	-	-	5	-	5
Sources of Drinking Water									
All respondents	12	11	17	10	16	14	11	15	14
Well	11	11	-	-	16	14	2	15	-
Tap	1	-	17	-	-	-	-	-	-
Hand pump	-	-	-	9	-	-	5	-	4
River	-	-	-	-	-	-	-	-	3
Not specified	-	-	-	1	-	-	6	-	7
Sources of other water									
Well	11	11	-	-	6	14	2	15	-
Tap	1	-	17	-	-	-	-	-	-
Hand pump	-	-	-	9	-	-	3	-	4
River	-	-	-	-	10	-	-	-	3
Pond	-	-	-	-	-	-	1	-	-
Not specified	-	-	-	1	-	-	6	-	7

	Tide	Velas	Jamb	Bardi	Bodhadi	Lakhmapur	Umbre	Palora	Tarapur
Type of container for drinking water									
Narrow neck	-	5	9	-	8	7	3	7	-
Wide/open mouth	12	6	7	9	8	7	2	7	7
Not specified	-	-	1	1	-	-	6	1	7
Type of container for other water									
Narrow neck	-	1	-	-	-	-	2	-	-
Wide/open mouth	12	10	15	9	16	14	2	14	7
Not specified	-	-	2	1	-	-	7	1	7
Whether livestock kept									
Yes	6	5	5	-	8	2	3	12	6
No	6	6	6	8	5	5	2	1	1
Not specified	-	-	6	2	3	7	6	2	7
Where livestock kept									
Within the house	-	-	1	-	-	2	1	1	3
Separate	6	5	4	-	8	-	2	10	-
Not specified	-	-	-	-	-	-	-	1	3
Where people usually go to toilet									
All respondents	12	11	17	10	16	14	11	15	14
Latrine in the house	-	3	6	-	-	-	-	-	-
Latrine near the house	-	5	-	-	-	-	-	-	-
Open fields	12	3	11	9	14	14	5	15	6
Not specified	-	-	-	1	2	-	6	-	8
Where infants stool disposed of									
All respondents	12	11	17	10	16	14	11	15	14

	Tide	Velas	Jamb	Bardi	Bodhadi	Lakhmapur	Umbre	Palora	Tarapur
Outside the house	6	4	8	-	3	-	-	4	2
Fields	6	4	2	3	-	-	4	-	-
Inside the house in garbage	-	-	-	6	7	10	1	4	-
Inside the house in toilets	-	-	-	-	-	-	-	4	-
Others	-	3	7	-	6	-	-	-	3
Not specified	-	-	-	1	-	4	6	3	9
Whether Radio listened to									
Yes	5	7	11	1	2	-	3	10	5
No	7	4	6	8	14	14	2	5	2
Not specified	-	-	-	1	-	-	6	-	7
Whether TV viewed									
Yes	2	1	8	-	-	-	-	3	1
No	10	6	9	9	16	14	4	11	5
Not specified	-	4	-	1	-	-	7	1	8
Whether Newspaper read									
Yes	4	6	9	-	-	-	-	4	4
No	8	5	8	9	16	14	4	10	3
Not specified	-	-	-	1	-	-	7	1	7
No of calendar/ posters									
1	5	1	4	4	2	2	1	3	1
2+	3	10	4	-	1	6	-	7	1
None	1	-	9	5	12	4	4	5	3
Not specified	3	-	-	1	1	2	6	-	9

APPENDIX C2

Information from Health Practitioners

	Anganwadi	Frontline Worker	MBBS	Others
All respondents	*3*	*8*	*12*	*8*
MBBS from Sevagram Medical College. Also DGO	-	-	1	-
D A S F	-	-	1	-
M B B S	-	-	3	-
M B B S from Sion Medical College	-	-	1	-
M B B S from Nagpur	-	-	3	-
MBBS, MCPH, DCH	-	-	1	-
MBBS, DOMH, DMB, BSc	-	-	1	-
MBBS from Aurangabad	-	-	1	-
DHB from Hyderabad	-	-	-	1
Integrated course from Calcutta	-	-	-	1
Studied from books	-	-	-	1
DSSC (Sion) & studied Ayurvedic in Podar College	-	-	-	1
B.Com	-	-	-	1
BAMS	-	-	-	1
Studied from father	-	-	-	1
DMP	-	-	-	1
Length of practice				
Just started	-	-	1	-
6 months	-	1	-	-
1 year	1	1	1	-
$1^1/_2$ years	-	-	1	-
2 years	1	1	2	-
3 years	1	-	1	-
4 years	-	-	2	1
6 years	-	-	-	1
13 years	-	1	-	-
14 years	-	-	1	-
16 years	-	1	-	-
17 years	-	-	1	1
18 years	-	-	1	-
19 years	-	1	-	-
25 years	1	1	-	
27 years	-	-	-	1
35 years	-	-	-	1
36 years	-	-	-	1
Not answered	-	1	-	2
Full time	2	5	4	2
Part time	1	2	-	1
Not answered	-	1	8	5
Training				
3 months training at Gargoti	1	-	-	-
3 months training at Palgadi	1	-	-	-
Not answered	1	-	-	-

	Frontline Anganwadi	Worker	MBBS	Others
A N M training of 1 yr	-	1	-	-
2 months training at Nanded	-	1	-	-
C H V	-	1	-	-
3 months	-	1	-	-
6 months training in Bombay and 3 months MPW training	-	1	-	-
2 yrs course from Satla Inst	-	1	-	-
2 yrs training of Nurse	-	1	-	-
3 months training	-	1	-	-

APPENDIX C3

Information from Retailers

	Towns	Villages
All Respondents	*12*	*1*
1) **Age of outlet**		
2 years	1	1
3 years	2	-
7 years	3	-
9 years	2	-
25 years	3	-
Not specified	1	-
2) **Training/License**		
Diploma in Pharmacy	5	-
Bachelor in Pharmacy	1	-
Working experience	6	1*
3) **Full time**	11	1
Part time	-	-
Not specified	1	-
4) **Medicines dispensed**		
Allopathic		
Ayurvedic		
Homeopathic		

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* Got license based on working experience as a special case

APPENDIX D

Glossary of Terms

English	Local Term
Arrowroot	*Arraroot*
Babul seeds	*Babulichi bi*
Butter	*Changla*
Biscuit-like	*Biscuit a sarkhi*
Black	*Kalabhor*
Bloated face	*Tond gaal phugtat*
Bloody stool	*Raktachi sandaas*
Boiled water	*Ukadleyla pani*
Bottle for diarrhoea	*Zade ki bottle*
Bowl	*Vati*
Camphor	*Kapoor*
Cannot enunciate	*Spasht bol shakat nahi*
Cholera	*Cholera*
Clammy limbs	*Haath pay gaar padtat*
Clarified butter	*Tup*
Clay	*Maati*
Cleanliness	*Svachata*
Cool stomach	*Pot shantatrahaten*
Continuous	*Shurush asto*
Cranky	*Kirkir kartat*
Dangerous	*Khatarnaak*
Deficiency	*Kami padla*
Dehydrated/dry	*Sukhaltla/Sukhun*
Dehydration	*Satvi*
Death	*Mrityu*
Die	*Marail/Basan*
Diet	*Aahar*
Digestive power	*Pachaichi takat*
Diluted milk	*Patal dudh*
Doesn't speak or walk	*Boltat chaltat nahi*
Drawn face	*Chehra padto*
Dried gooseberry	*Suklayla avla*
Dry lime	*Valalele limbu*
Eczema	*E sab*
Evil eye	*Dhrisht lagna*
Excess	*Pramanachya bahair*
Exorcise/Remove the evil eye	*Dhrishti kadla/utara*
Falls sick	*Tabyat bighadli*
Fat	*Latth*
Fenugreek	*Methi*
Fever	*Jwar*
Filter through a cloth	*Vastragaal*
Flaccid	*Dhilay dhilay padtay*
Foamy	*Fes*
Fontanelle	*Talu*
Forceful stools	*Lambparyant jaat*
Foul smell	*Pushkal ghaan bas*

English	Local Term
Fresh	*Tartareen*
Garbage	*Kachra*
Gooseberry	*Avla*
Green loose motion	*Hirvi hagvan*
Gruel	*Pej ambi*
Handful	*Muth bhar*
Healthy	*Gut guteet/Aanganey bhurlele*
Heat	*Ushanemule*
Heaving stomach	*Pot havat asail tat/Pot udte var khali*
Herbal treatment	*Jhadpala*
Herbs	*Jadibuti*
Honey	*Saida/Madh/Shahad*
Incantations	*Mantra*
Impure water	*Aswach pani*
Indigestion	*Ajirna*
Inert	*Padun rahicha*
Irritable	*Chidchid kartat*
Jaggery	*Gud*
Joss stick	*Agarbatti*
Jug/Pot	*Tambya*
Lack of energy	*Galun basail*
Leftover food	*Sheel anna*
Lentils	*Varan/Dal*
Listless	*Nistaj*
Liquidy	*Patal*
Liquid medicinal syrup	*Patal aushadh*
Looseness	*Dhilapan*
Lots	*Jasta*
Magic	*Jaadu*
Massage	*Maalish*
Measles	*Govar*
Medicinal liquids	*Aushadi pani*
Milk	*Dudh*
Milk with incantations	*Mantralet dudh*
Mint	*Pudina*
Mother who has recently given birth	*Balteen bai*
Mucus	*Aav/Badkey*
Mumps	*Galgund*
Mustard	*Mohar*
Net-like	*Jali*
Numbness of extremities	*Payla mungya aalya*
Nutmeg	*Jaiphal*
Oil of Mali	*Malichi tale*
Oily food	*Telkat padarth*
Onion	*Kandha*
Open-mouthed pot for boiling water (with rings on either side)	*Ghangaley*
Opium	*Afu*
Outside food	*Baher cha padarth*
Pale	*Utareela*
Pale, yellow skin	*Pivla jard*
Parched/dry	*Sukhtat*
Parsley	*Ova*
Particles/drops	*Shintoday*
Pepper	*Meeray*

English	Local Term
Pinch	*Chimutbhar*
Pitcher	*Raanjan*
Pots for storing water	*Handi/Matkee*
Pulses	*Dal/Varan*
Pungent/spicy	*Tikhat*
Quiet	*Sunna put/Halchal na kara*
Red diarrhoea	*Lal rakta padto*
Relief	*Aaram*
Restless	*Nisthir/Asvasth pana*
Rice	*Bhat*
Rice particles	*Ritad*
Rice & green gram	*Moongachi khichadi*
Rice & pulses	*Varanbhat*
Rice water	*Kanji/Badli*
Rolling eyes	*Dolay pandrey firtat*
Sacrifice of a cockerel	*Lombda kapne*
Sacrifice of a sheep	*Bakra kapne*
Salt	*Meeth*
Salty	*Kharat*
Serious	*Gambhir*
Sleepy	*Dolyavar dapad rahtey*
Smell	*Vas*
Soft rice	*Maubhat/Naram bhat/Khimat*
Sour	*Aambat*
Skin	*Kaya*
Skin changes	*Kamach palratey*
Sticky	*Chikat chikat*
Stomach ache	*Pot dukhi*
Stomach massage	*Pot chilal*
Stopping (the episode)	*Basun jane*
Strength	*Shakti*
Sugar	*Saakhar*
Sweet	*Gaud*
Sweet lime	*Mausambi*
Sweet refreshing drink	*Sherbet*
Tablet	*Guti*
Teething	*Dat nigtat*
Thin	*Bareek*
Thick/coarse	*Raath*
Thirst	*Tahaan*
Tough/hard	*Ghatta*
Turmeric	*Halad/Halkund*
Unboiled	*Niras*
Uncomfortable/Panting	*Dum rahat nahi*
Upset stomach	*Pot jatay*
Vaidya	*Maharaj*
Vegetable	*Bhaji*
Vomits	*Ultiya*
Vomiting and loose motions	*Vantya julabh*
Vomit-like milk	*Dudhachi ulti*
Watery	*Panya sarkhi*
Weak	*Halka, Kharab, Galun jatey*
White, pale	*Phikat pandre*
White barley	*Pandreya juaricha bhakriya*
Worms	*Jantu*

APPENDIX E

Food List

i. Food in the normal diet

English	Local Term
1. Barley *chappatis*	*Jvarchi bhakri*
2. Wheat *chappatis*	*Poli*
3. Rice	*Bhat*
4. Curry	*Amti*
5. Pulses	*Dal/Varan*
6. Milk	*Dudh*
7. Pickle	*Chutney*
8. Biscuits	*Biscuit*
9. Tea	*Chaha*
10. Coffee	*Coffee*
11. Vegetables	*Bhaji*
12. Sweet, soft preparation of *rawa*	*Sheera*
13. Cereal, like rice	*Tandulsa*
14. Vegetable, like Fenugreek	*Math*
15. Oily *chappatis*	*Telatli bhakri, Godetel bhakri*
16. Rice and salt	*Bhat ani meeth*
17. Pickle and *chappatis*	*Chutney ani poli*
18. Bread	*Double roti*
19. Mutton	*Mutton*
20. Eggs	*Ande*
21. Fish	*Maase*

ii. Food given during diarrhoeal disease

English	Local	Mothers	HP's
Apple	*Safarchand*	-	✓
Arrowroot powder in water	*Arroroot panya Madhe*	-	✓
Banana	*Kele*	✓	✓
Barley gruel	*Jvarchi pej/Ambi*	✓	✓
Biscuits	Biscuit	✓	✓
Bitter gourd	*Karlyachi pani*	✓	-
Boiled potatoes	*Ukadleyla batata*	-	✓
Boiled water	*Ukadley la pani*	✓	✓
Bread	*Double roti*	-	✓
Chappatis	*Bhakri*	✓	✓
Cucumber	*Kakdi*	-	✓
Deopiated poppy seeds	*Khus-khus*	-	✓
Fenugreek gruel	*Methi khimat*	✓	-
Fruit	*Phal*	✓	✓
Fruit juice	*Falancha rus*	✓	✓
Glucose water	*Glucose pani*	✓	✓
Groundnuts soaked in milk	*Shenga dudha*	✓	✓
	Bhijavleyla	-	✓
Jaggery and groundnuts	*Gudani shenga*	-	✓
Lentils and rice	*Khichri*	✓	✓
Milk	*Dudh*	✓	✓
Nutmeg	*Jaiphal*	✓	✓

English	Local Term	Mothers	HP's
Mint	*Pudina*	✓	-
Papaya	*Papaya*	-	✓
Plain lentils	*Dal*	✓	✓
Powdered skin of pomegranate and nutmeg	*Dalimbicha sahlachi bareek kut ani jaiphal*	-	✓
Pulses and rice	*Varan bhat*	✓	✓
Rice and green gram	*Moongachi khichdi*	✓	✓
Sago	*Sabudana*	✓	✓
Sago gruel	*Sabudana pej*	✓	✓
Sago and sugar and water	*Sabudana kheer*	✓	✓
Soft watery rice	*Khimat, Maubhat, Narambhat*	✓	✓
Spinach	*Methi*	✓	✓
Starch water	*Kanji/Badli*	✓	✓
Sugar and curd	*Sakhar ani dhai*	-	✓
Vegetables	*Bhaji*	✓	✓
Vegetable soup	*Bhaji cha pani*	-	✓
Wheat flour gruel	*Ghavachi pej*	✓	✓
Whey	*Nasavani*	-	✓

APPENDIX F

Medicine List

	Aganwadi	Frontline Worker	MBBS	Others
All respondents	*3*	*8*	*12*	*8*
Allopathic medicines				
Bismuth-Kaolin	-	1	1	-
Binding mixture	-	-	1	-
Chlorostrep	-	-	3	-
Chloroamphenicol	-	-	1	-
Chloromycetin	-	-	1	-
Chlorontenic & Streptomycin	-	-	-	1
Cormizon	-	-	-	1
Electrolyte	-	1	-	-
Electral	-	1	3	1
Esdin	-	1	-	-
Enterovioform	-	-	1	-
Enterotin	-	-	1	-
Efmartite	-	-	-	1
Furaxone	-	2	-	1
Furazolidine	-	1	-	-
Furopac	-	-	-	1
Ferozbolin	-	-	-	1
F F tablets	1	-	-	-
Kaolin-Pectin mixture/Kaolin mix	-	1	3	3
Kaolin	-	1	-	1
Ketaform	-	-	-	1
Mexaform	-	2	1	2
Menond (tab)	-	1	-	-
Metrozone	-	-	1	1
Metronidazole	-	-	1	1
Metronozolin	-	-	-	1
Mefinterol	-	-	-	1
O.R.S.	-	6	3	-
Perusoin	-	-	1	-
Pectokab	-	1	-	-
Pectofer	-	2	1	-
Phirazelon	-	1	-	-
Puleraelodel	-	-	1	-
Pharmastrep	-	-	1	-
Protein mix	-	-	-	1
Rehydrophenyl	-	-	-	1
Sodamint (tab)	-	1	-	1
Sulphadiazine	-	-	1	-
Stepnor	-	-	-	1
Terramycin	-	-	1	1
Tetracyclin	-	-	1	-
Yuravet	-	-	1	-

	Aganwadi	Frontline Worker	MBBS	Others
All respondents	*3*	*8*	*12*	*8*
Ayurvedic medicines				
Arrowroot powder	-	-	-	1
Amavarh Kesari	-	-	-	1
Belladona	-	2	-	-
Chale-chom Churiga (with butter milk)	-	-	-	1
Den-tonic	-	-	-	1
Dashamoolarishtar	-	-	-	1
Drakshasav	-	-	-	1
Jalsanjeevani Powder (sugar and soda and lime)	-	1	-	-
Kutjarishta	-	-	-	3
Kamdudhar	-	-	-	1
Krimignu	-	-	-	1
Mrugshrung	-	-	-	1
Praval Bhasm	-	-	-	1
Sitapaladi	-	-	-	1
Sanjeevani Gootica	-	-	-	1
Sutshekhar Ali Sarari	-	-	-	1

APPENDIX G

Method of Preparation of HAF/SSS/ORS—Mothers

	Ingredients	Amount	
HAF			
1.	Tea	NS	
2.	Coffee	NS	
3.	Unboiled milk	NS	
4.	Boiled water	NS	
5.	Sugar water	NS	
6.	Diluted milk	NS	
7.	Bitter gourd leaves juice	1 drop	
8.	Breast milk	1 spoonful	
8.	*Utarani* juice	3 drops	
9.	Orange, mausambi juice	NS	
10.	Glucose water	NS	
11.	Lime water	NS	
12.	Lime in milk	NS	
13.	Sago	NS	To make a
	Water	NS	liquid, sweet
	Sugar	NS	preparation
14.	Water of pulses (*dal*)	NS	
15.	Water	NS	
16.	Sweet lime juice	NS	
16.	Wheat flour	NS	To form a
	Boiling water	NS	gruel
17.	Barley flour	NS	To form a
	Boiling water	NS	gruel
18.	Onion juice	NS	
	Honey	NS	
19.	Sugar water	NS	
20.	Rice water	NS	
ORS			
1.	Water	1 glass	
	Glucose/Electral	1 spoon	
2.	Water	1 cup	
	Glucose/Electral	1 spoon	
3.	Water	1 litre	
	Glucose/Electral	NS	
4.	Water	NS	
	Powder when mixed with water has an orange colour	1 spoon	
5.	Water	To taste like	
	Glucose	*'Sherbet'*	
6.	Water	To taste like	
	Electral	lime water	
7.	Boiled water	1 cup	
	Glucose/Electral	1 spoon	
8.	Jaggery	1 spoon	
	Glucose/Electral	NS	
	Water	NS	

	Ingredients	Amount
	SSS	
1.	Boiled water	NS
	Salt	1 pinch
	Sugar	1 handful
2.	Water	NS Made to
	Lime	NS taste like
	Salt	NS a sherbet
3.	Water	2 spoons
	Sugar	A little bit
	Salt	A little bit
4.	Boiled water	NS
	Sugar	A little bit
	Salt	A little bit
	Lime juice	NS
5.	Water	1 litre
	Sugar	NS
	Salt	NS
6.	Water	1 jug
	Salt	1 spoon
	Sugar	NS
7.	Water	NS
	Salt	1 pinch
	Sugar	1 handful
8.	Water	1 glass
	Salt	2 pinches
	Sugar	1 handful
9.	Water	1 litre
	Sugar	1 handful
	Salt	2 pinches
10.	Water	1 spoon
	Salt	1 spoon
	Sugar	1 spoon
11.	Water	1 cup
	Salt	2 spoons
	Sugar	1 handful
12.	Water	1 pot
	Salt	1 pinch
	Sugar	1 handful
13.	Water	1 cup
	Salt	$1^1/_2$ spoons
	Sugar	2 spoons
	Soda	1 small spoon
14.	Water	NS) Mix and
	Salt	NS) then boil
	Sugar	NS) the solution
15.	Water	NS
	Salt	$^1/_2$ spoon
	Sugar	$^1/_2$ spoon
	Lime	A little
16.	Water	1 pot
	Salt	2 spoons
	Sugar	2 spoons
17.	Water	1 cup
	Salt	1 pinch
	Sugar	$^1/_2$-1 spoon

Method of Preparation of HAF/SSS/ORS—Health Practitioners

	Frontline Workers		Other Medical	
	ICDS	Other	MBBS	Others
ORS	6	2	3	2
SSS	5	4	9	6
HAF	5	4	8	6
Glucose	-	-	-	3
Electral	1	-	7	4
Plain water	-	2	1	-

	Ingredients	Amount
ORS		
1.	Water	1 glass
	Electral	1 spoon
2.	Water	NS
	Electral	
3.	Water	1 cup
	Powder	2 spoon
4.	Water	$^1/_2$ litre
	Small pack of ORS	the full pack
5.	Water	NS
	Powder	NS
	Sugar	1 spoon
6.	Water	2-3 cups
	Powder	2 spoons
7.	Water	1 cup
	Powder	1 spoon
SSS		
1.	Water	6 cups
	Sugar	1 handful
	Salt	1 pinch
2.	Water	1 cup
	Salt	$^1/_2$ spoon
	Sugar	1 spoon
3.	Water	NS
	Salt	1 spoon
	Sugar	2-3 spoons
4.	Boiled water	1 cup
	Sugar	1 spoon
	Salt	1 pinch
	Soda bicarbonate	NS
5.	Water	1 glass
	Salt	$^1/_4$ spoon
	Sugar	1-2 spoons
6.	Water	1 glass
	Salt	NS) Should
	Sugar	2-3 spoons) taste sweet
	Lime	1 Squeeze
7.	Water	1 Litre
	Salt	2 pinches
	Baking powder	1 pinch
	Lime juice	1 Squeeze
	Sugar	1 pinch

	Ingredients	Amount
SSS		
8.	Water	$^1/_2$ glass
	Salt	1 spoon
	Sugar	1 spoon
9.	Water	1 glass
	Salt	1 spoon
	Sugar	1 spoon
10.	Water	1 cup
	Salt	1 pinch
	Sugar	1 pinch
11.	Boiled water	1 *'lota'* (pot)
	Salt	1 pinch
	Sugar	1 teaspoon
12.	Water	2 litres
	Salt	1 spoon
	Sugar	1 teaspoon
13.	Boiled water	1 *'lota'* (pot)
	Salt	One 3-finger pinch
	Sugar	1 handful
14.	Boiled water	8 cups
	Salt	1 pinch
	Sugar	1 handful
	Lime	NS
15.	Water	1 litre
	Salt	1 pinch
	Sugar	1 fistful
16.	Water	1 litre
	Salt	1 spoon
	Sugar	2-3 teaspoons
17.	Water	1 litre
	Salt	1 pinch
	Sugar	1 handful
18.	Water	1 cup
	Salt	$^1/_4$ teaspoon
	Sugar	1 teaspoon
19.	Boiled water	NS
	Salt	1 pinch
	Sugar	a little

Recommendations Regarding Breast Milk

	Frontline Workers		Other Medical	
	ICDS	Other	MBBS	Others
Continue	6	2	3	4
Reduce	-	-	3	1
Increase	-	-	1	1
Stop completely	-	-	1	1

Method of Preparation of HAF/SSS/ORS—Retailers

	Recommended*
ORS	-
HAF	2
SSS	4
Glucose	1
Electral	10
Plain water	1

	Ingredients	Amount
ORS		
1.	Water	1 glass
	Electral	1 spoon
2.	Water	$^1/_2$ glass
	Powder	2 spoons
3.	Water)	$^1/_2$ cup
	Powder) *Sherbat*	1 spoon
4.	Water	1 glass
	Sachet	1 sachet
5.	Water	1 cup
	Powder	2 spoons
SSS		
1.	Water	1 glass
	Salt	$^1/_2$ spoon
	Sugar	1 spoon
2.	Water	1 cup
	Salt	a little
	Sugar	2-3 spoons
	Lime juice	NS
3.	Water	50 ml
	Salt	5 gm
	Sugar	10 gm
	Lime juice	5 gm

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* Either by a health practitioner or themselves

QUANTITATIVE DATA

ARRANGEMENT OF THE REPORT

The report that follows comprises a detailed account and analysis of the findings from the quantitative study amongst mothers in the West Zone.

Wherever relevant, summary tables have been provided to support the findings and the analysis.

Percentage figures in the tables refer to a base, which has been provided with each table. There are two base figures. One named "Base", denotes the actual number of people interviewed to whom that question was asked. The weighted base, referred to as "Wtd Base" denotes the sample size after corrections had been made for the relative size of the female rural population in each region in proportion to the total rural female population of all regions covered. Wherever any numbers (rather than percentages) have been quoted in the table, they refer to the weighted base.

Each table or section is followed by a table number printed in brackets in the lower right hand corner. This refers to the table number in the printout which would have to be referred to if more detailed data is required.

1. BACKGROUND

1.1 PROFILE OF THE RESPONDENT

A respondent was chosen on the basis of the following criteria :

> she had at least one child who was not more than 5 years old; and that child had suffered an attack of diarrhoea not more than 2 months previously.

(Henceforth, in this report, the terms "mothers" and "women" will be used synonymously with eligible respondents).

1.1.1 Age

Over three-fourths of the respondents were in the 21-30 year group while the remainder were either below 20 years (9%) or between 31 and 40 years (13%).

Only one respondent was above 41 years of age. The average age was 26 years.

Percentages for the states did not vary significantly from the zonal figures. Differences between the regions were small.

Fewer women were below 20 years in the larger villages (4%) than in the medium-sized (8%) and small ones (10%).

	All India	West zone	Gujarat	M.P.*	Maharashtra
Base :	5310	1169	296	456	417
Wtd Base :	5308	1059	216	422	422
	%	%	%	%	%
Below 20 years	11	9	8	10	8
21 - 30 years	70	78	77	75	83
31 - 40 years	19	13	15	16	9
Average Age (years)	26.6	26.2	26.4	26.4	25.9

(Table 1)

1.1.2 Children

Most women had not had more than 3 children

	All-India	West zone	Gujarat	M.P.	Maharashtra
Base	5310	1169	296	456	417
Wtd Base:	5308	1059	216	422	422
	%	%	%	%	%
1 child	19	24	20	28	21
2 children	25	24	18	26	24

* Madhya Pradesh

	All-India	West zone	Gujarat	M.P.	Maharashtra
3 children	21	24	26	20	26
4 children	14	13	16	9	14
5 children	9	8	9	8	6
6 children	5	3	4	2	4
7 children	3	2	4	3	1
8 children	2	2	2	2	1
9 children	2	2	1	2	2

(Table 2)

On an average, each mother had 3 children, of whom 2.6 were still alive i.e., 13% of all children born to our respondents had died.

	Ever born	Alive today	% Deaths*
All India	3.2	2.8	13
West zone	3.0	2.6	13
Gujarat	3.2	2.8	13
M.P	2.9	2.4	17
Maharashtra	3.0	2.7	10

Most women below 20 had had only one child and a fourth of them had had two. Very few (8 women) had had three children. On the other hand, most of the women between 31 and 40 years had had more than three children.

West Zone	Below 20 years	21-30 years	31-40 years
Base	1169	103	912	149
Wtd Base	1059	93	827	136
	%	%	%	%
1 child	24	67	22	4
2 children	24	25	26	7
3 children	24	8	27	13
4 children	13	-	15	8
4+ children	17	-	10	70
Averge no. of ever born per mother	3.0	1.4	2.7	5.7

Half of the mothers had only one child below the age of five, while another third had two. 82 respondents had had three children during the past 5 years.

(Tables 2-5)

1.1.3 Schooling of the Respondent

	All–India	West zone	Gujarat	M.P.	Maharashtra
Base	5310	1169	296	456	417
Wtd Base	5308	1059	216	422	422
	%	%	%	%	%
None	67	68	66	76	61
1 - 2 years	3	3	2	5	2
3 - 4 years	8	7	3	8	8
5 - 6 years	9	7	9	5	7
7 - 8 years	7	8	7	5	13
9+ years	6	7	13	2	8

* The difference between the number of children ever born and those alive today, expressed as a percentage of those ever born.

Very few respondents had been to school. However, of those who had, about a quarter stayed on for only three years while half of them acquired 5 to 8 years of schooling. Only one out of ten women who went to school dropped out before three years.

Lack of education was particularly high in the Malwa (83%) and Bundelkhand (79%) regions of Madhya Pradesh; Kutch (56%) in Gujarat, and Konkan (47%) in Maharashtra were relatively better off.

The size of the village they lived in appeared to have some influence on whether women could go to school or not. In the smaller villages, there were more women who had never been to school.

It is also interesting to look at the effect of schooling on the number of children women had and the number of them who had died so far.

Years of schooling	Ever born	Alive today
None	3.1	2.6
1 - 2	3.3	3.1
3 - 4	2.9	2.6
5 - 6	2.8	2.5
7 - 8	2.7	2.4
9 - 10	2.6	2.4
11 - 12	1.6	1.5
12+	1.9	1.8

Schooling does seem to have an influence on the number of children a woman had and her ability to ensure survival of her children. Women with more years of schooling tended to have fewer children and fewer of the children born to them died. (Tables 6, 7)

Reading ability: Women required about 3-4 years of schooling before they were able to even read slowly. Fluency was acquired mostly only after 5-6 years of school. A year or two of education did not seem to have much effect on literacy.

	Read fluently	Read slowly	Could not read
Base	236	99	834
Wtd Base	197	95	768
	%	%	%
No schooling	3	2	93
1 - 2 years	2	7	3
3 - 4 years	10	39	2
5 - 6 years	21	27	1
7 - 8 years	33	24	-
8+ years	32	2	1
Average years of study*	7.6	5.0	3.8

However, it is useful to note that nine out of ten women who entered school stayed on for at least three years while two-thirds of those who went to school acquired at least five years of education. Thus, those who did enter school were reasonably sure to acquire fluency in reading; the problem lay in the fact that most women (68%) did not go to school at all.

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* Figure represents average number of years in school spent by all those who entered school.

1.2 FAMILY DATA

1.2.1 Family Structure

Joint families were more common than nuclear ones and this was more noticeable in the following regions :

Saurashtra (Gujarat) :	68%
Marathwada (Maharashtra) :	69%
Malwa (M.P):	78%

State-wise figures were :

State	Joint %	Nuclear %
Gujarat	58	43
Madhya Pradesh	62	38
Maharashtra	69	31
West Zone	60	40

Nuclear families were more numerous in two regions :

Kutch	57%
Bundelkhand	53%

(Table 9)

1.2.2 Occupation of the Husband

The most common occupations were farming and day labour, together accounting for more than two-thirds of the households and state-wise differences were not wide for most occupations :

	All-India	West zone	Gujarat	M.P.	Maharashtra
Base :	5310	1169	296	456	417
Wtd Base	5308	1059	216	422	422
	%	%	%	%	%
Farmer	38	39	33	49	32
Labourer	30	32	36	30	30
Trade/Business	9	3	3	3	2
Service	13	14	15	8	19
Self-employed	6	8	9	7	10

In Kutch, labourers were the most common (44%) followed by service (21%). Farmers were comparatively less common (17%).

The other exception was the Konkan region, where more men were in service (43%) than in farming (22%) or labour (11%).

(Table 10)

1.2.3 Kitchen Fuel

Wood was by far the favourite fuel everywhere, though cowdung was also used by many households. Kerosene was in use, too.

	All-India	West zone	Gujarat	M.P.	Maharashtra
Base :	5310	1169	296	456	417
Wtd Base	5308	1059	216	422	422
	%	%	%	%	%
Wood	89	96	92	99	95
Cowdung cakes	52	66	67	70	62

	All-India	West zone	Gujarat	M.P.	Maharashtra
Kerosene	6	12	18	2	19
Coal	5	3	8	3	1
Gas	1	1	2	-	2

Use of cowdung cakes was particularly high in the following areas :

Saurashtra	82%
Malwa	90%
Bundelkhand	96%
Marathwada	83%

However, the high proportion of use of wood indicates that cowdung was an auxiliary source of fuel. In Chhatisgarh, for example, 100% of the respondents used wood. In Konkan, use of kerosene was common (33%), while cowdung cakes were comparatively rare (9%).

(Table 12)

1.2.4 Lighting of Kitchen Fires

Kitchen fires were lit twice a day in most households except in Gujarat where they were lit thrice a day in over half the households.

	All-India	West zone	Gujarat	M.P.	Maharashtra
Base :	5310	1169	296	456	417
Wtd Base	5308	1059	216	422	422
	%	%	%	%	%
Once a day	3	1	1	-	2
Twice a day	58	52	21	51	68
Thrice a day	25	26	53	19	19
As and when required	14	21	25	30	11
Average times lit	2.6	2.9	3.3	3.1	2.5

Nearly half the women lit their kitchen fires at least three times a day, and figures for all regions of Gujarat were better than this.

Flexibility in lighting fires was lowest in Maharashtra and this was because few women in Desh, Marathwada and Vidharbha lit the kitchen fires more than twice a day. In the Konkan, on the other hand, 8 out of 10 women mentioned three or more times as the daily figure.

The greatest flexibility was evident in Bundelkhand, where 42% of the women lit their kitchen fires whenever required.

(Table 13)

2. KNOWLEDGE AND ATTITUDES

2.1 AWARENESS OF LOOSE MOTION TYPES

2.1.1 Spontaneous Awareness

When respondents were asked the names used for different types of diarrhoea, most respondents in the West Zone mentioned one of the following :

	%
Loose/thin motions	48
Watery motions	36
Green motions	32

Other types mentioned by more than 10% of the women were :

	%
Yellow motions	22
Bloody/red motions	18
White/milky motions	16
Separate/grain-like	13
Mucus/pus in motions	12

Women in the West Zone were not aware of very many varieties of diarrhoea and on the average, each of them mentioned 2.4 types. Figures for the states did not vary much.

	Average number of types mentioned
All India	2.8
West zone	2.5
Gujarat	2.8
Madhya Pradesh	2.4
Maharashtra	2.3

The extent of awareness can be examined from another angle. Assuming that a type of diarrhoea is well known if at least 33% of the women in a region have mentioned it, the number of well-known types in each region was as follows :

	Types well-known (mentioned by over 33%)
West Zone	Loose/thin, watery
Gujarat	Loose/thin, watery

	Types well-known (mentioned by over 33%)
Kutch	Green, yellow, watery
Saurashtra	Loose/thin, green, yellow, watery
Plains	Loose/thin, green, watery
Madhya Pradesh	Loose/thin, watery
Malwa	Watery
Bundelkhand	Loose/thin, watery, bloody/red
Chhatisgarh	Loose/thin, watery
Maharashtra	Loose/thin, green
Konkan	Loose/thin
Desh	Loose/thin
Marathwada	Loose/thin, green
Vidharbha	Loose/thin, green

Finally, only 10 mothers mentioned the word diarrhoea spontaneously. (Table 51)

2.1.2 Seriousness of Spontaneously Mentioned Types

Women were asked whether each type they mentioned was in their opinion not serious, caused some concern, or was very serious; and their responses were placed on a three-point scale. Mean scores of each state for the 8 most commonly mentioned types are given below :

	All-India	West zone	Gujarat	M.P.	Maharashtra
Loose/thin motions	2.5	2.4	2.4	2.6	2.3
Watery motions	2.6	2.5	2.7	2.4	2.4
Green motions	2.4	2.5	2.6	2.5	2.5
Yellow motions	2.2	2.2	2.4	2.1	2.3
Bloody/red motions	2.8	2.8	2.7	2.8	2.8
White/milky motions	2.3	2.5	2.7	2.4	2.6
Separate/grain-like	2.4	2.5	2.5	2.6	2.3
Mucus/pus in motions	2.6	2.7	2.7	2.8	2.7

Women who were spontaneously aware of a type of loose motion, also felt concerned when their children suffered from an attack of that type.

Higher levels of concern were expressed in Gujarat than in the rest of the zone. The presence of blood, mucus or pus in the stools was indicative of a serious disorder to rural mothers.

(Table 53)

2.1.3 Total Awareness

When respondents were aided by a list of names of types which was read out to them, their awareness increased considerably. Moreover, the most common ones that emerged were ones that had not been mentioned earlier; teething diarrhoea, diarrhoea due to worms, and vomiting and loose motions.

It therefore becomes necessary to combine spontaneous awareness with the aided awareness figures and examine the total awareness that women exhibited of the various types of diarrhoea.

Total awareness figures (of the top 10 types) for the zone and its constituent states were, in descending order of awareness, as follows :

	All-India	West zone	Gujarat	M.P.	Maharashtra
	%	%	%	%	%
Watery motions	89	76	82	71	78
Teething diarrhoea	82	76	82	58	91
Loose/thin motions	81	71	78	48	89
Green motions	82	63	83	40	77
Bloody/red motions	81	63	65	41	84
Yellow motions	78	62	70	39	80
Vomiting and loose motions	71	57	59	34	78
White/milky motions	71	56	67	40	67
Worms	61	55	51	33	80
Stomach disorder/upset	52	53	60	34	68

(Total awareness of the term 'diarrhoea' in the zone was 6% i.e 68 women).
The number of types that women exhibited awareness of were:

	No. of types
All-India	11.1
West Zone	8.9
Gujarat	10.7
Madhya Pradesh	6.1
Maharashtra	10.9

Maharashtra, which mentioned the fewest number of types spontaneously, now knew more types than the other states. Moreover, awareness of types varied from state to state even among the more common types. Interestingly, although total awareness was quite different from spontaneous awareness, this caused no difference in perception of seriousness of the various types.
(Tables 52, 54)

2.2 KNOWLEDGE OF SYMPTOMS

2.2.1 Main Symptoms

Frequent motions were considered the main sign of a diarrhoeal problem, except in Madhya Pradesh, where loose motions were seen as the main indicator.

Regional differences were marked in Madhya Pradesh and Maharashtra.

	Base	Wtd Base	Frequent motions	Loose motions	Don't know
			%	%	%
All-India	5310	5308	47	49	7
West Zone	1169	1059	53	42	5
Gujarat	296	216	62	34	5
Kutch	109	10	79	21	-
Saurashtra	90	84	73	20	7
Plains	97	122	53	45	4
Madhya Pradesh	456	422	35	61	5
Malwa	144	117	43	52	6
Bundelkhand	166	120	13	81	5
Chhatisgarh	146	185	44	53	3
Maharashtra	417	422	67	28	7
Konkan	98	71	65	40	5
Desh	102	150	60	33	7
Marathwada	72	104	60	29	11
Vidharbha	145	97	86	10	3

There were very few women who were unable to name the main sign of diarrhoea.

(Table 55)

2.2.2 Definitions

4 or 5 motions a day signified diarrhoea to the average woman in the West Zone, but there was some difference between states. Furthermore, the mere onset of an episode of diarrhoea was not a cause for concern, since the frequency of loose motions which caused concern was considerably higher than that which indicated an attack.

	Average no. of loose motions per day that	
	Signify diarrhoea	Cause concern
All India	4.5	6.6
West Zone	4.6	6.8
Gujarat	4.0	6.3
Madhya Pradesh	5.2	8.5
Maharashtra	4.3	5.3

More than 9 out of 10 women felt that loose motions containing water were a cause for concern.

(Tables 56-58)

2.2.3 Symptoms That Caused Concern

There seemed to be a lack of knowledge about symptoms that indicated a serious problem. The only symptoms that were mentioned by over 10% of the respondents in response to this question were as follows :

	All-India	West zone	Gujarat	M.P.	Maharashtra
Several loose/ watery motions	9	28	43	17	31
Weakness	57	26	19	41	15
Fever	9	12	16	3	19
Don't know	6	19	8	17	28

All other symptoms were mentioned by less than a tenth of the women. The zonal response of "don't know" was also significantly higher than the national average.

2.2.4 Symptoms That Indicate Need For Medical Attention

Aggravation of the primary symptom of loose motions usually indicated the need for medical help.

	All-India		West Zone	
Symptoms	Cause for concern	Need for medical help	Cause for concern	Need for medical help
	%	%	%	%
Several loose/ watery motions	9	21	28	36
Weakness	57	41	26	17
Motions do not stop for some days	2	8	4	16
Fever	9	10	13	13
Don't know	6	-	19	17

None of the effects of dehydration was mentioned by more than 20 women (less than 2% of the sample). This could mean that women were not particularly worried by the manifestations of dehydration, or (which is more likely) they were not aware of the relationship between diarrhoea and dehydration.

The fact that continuous loose motions and several watery motions caused concern and made the mother seek medical help to a greater extent than it did the average Indian mother, indicates that the West Zone mother is more aware of the physical symptoms that indicate gravity and probably acts on these symptoms with the result that more severe symptoms are less commonly seen.

(Table 10)

2.3 PERCEPTION OF GRAVITY

2.3.1 Home Management to Prevent Worsening of a Loose Motion Problem

Most women felt that nothing could be done at home to contain a diarrhoeal problem. 25% preferred to take the child to a doctor, and less than a fifth (18%) felt that home remedies could be useful in preventing loose motions from worsening.

Although women who believed that diarrhoea was a product of fate or God's will were rare (4 women), very few knew of ORS and SSS. However, these figures match the national average figures for ORS and SSS. Figures for the regions are given below:

	Base	Wtd Base	Give SSS %	Give ORS %	Take to doctor %	Nothing can be done %	Home remedies %
All-India	5310	5308	2	1	14	56	25
West zone	1169	1059	2	1	27	53	18
Gujarat							
Kutch	109	10	-	-	33	25	47
Saurashtra	90	84	-	1	42	16	54
Plains	97	122	-	1	45	28	29
Madhya Pradesh							
Malwa	144	117	-	-	31	58	5
Bundelkhand	166	120	-	-	50	32	15
Chhatisgarh	146	185	-	-	30	62	16
Maharahstra							
Konkan	98	71	1	-	50	15	49
Desh	102	150	10	3	-	72	4
Marathwada	72	104	3	1	-	83	6
Vidharbha	145	97	2	-	1	84	7

Knowledge of ORS and SSS was restricted almost exclusively to Maharashtra. What was interesting however. was that in Desh, Marathwada and Vidharbha, women neither believed in nor knew of home remedies, nor did they talk of taking the child to a doctor. The overall helplessness expressed (between 72% and 84%) was very high both in terms of the zonal average as well as the national average.

2.3.2 Effects of Repeated Attacks

Weakness was most commonly mentioned as the effect of repeated attacks of diarrhoea (53%), particularly in Kutch (85%) and Bundelkhand (80%).

Other effects mentioned were: poor general health (mainly in Kutch), and weight loss (Kutch and Saurashtra).

At the other end of the spectrum was Marathwada, where only about a third mentioned weakness, and weight loss was not mentioned as an important effect of repeated attacks.

Death as an effect was spontaneously mentioned by only 7% of the women.

	Base	Wtd Base	Weak-ness	Poor general health	Weight loss	Death	Don't know
			%	%	%	%	%
All-India	5310	5308	62	13	9	12	12
West Zone	1169	1059	53	15	13	7	18
Gujarat							
Kutch	109	10	85	31	30	2	-
Saurashtra	90	84	69	18	39	-	2
Plains	97	122	53	18	21	7	7
Madhya Pradesh							
Malwa	144	117	38	17	15	15	14
Bundelkhand	166	120	80	8	13	15	3
Chhatisgarh	146	185	56	18	12	10	16
Maharashtra							
Konkan	98	71	52	16	10	5	14
Desh	102	150	52	14	7	2	26
Marathwada	72	104	36	11	1	1	42
Vidharbha	145	97	41	10	5	3	41

(Table 62)

2.3.3 Death

When asked whether death could occur as a consequence of loose motions, only 44% conceded the possibility. The rest either felt that it was rare, or denied the possibility, or did not know.

In the following table, the responses "yes, often" and "sometimes" have been clubbed together under "possible" and the responses "rarely", "no", "cannot happen" have been classified under "not possible".

	Base	Wtd Base	Possible	Not possible	Don't know
			%	%	%
All-India	4705	4653	63	22	15
West Zone	1086	985	44	36	21
Gujarat	237	207	26	56	18
Kutch	107	10	27	52	21
Saurashtra	90	84	21	59	20
Plains	90	113	29	54	17
Madhya Pradesh	395	368	68	13	19
Malwa	122	99	54	22	24
Bundelkhand	144	102	82	8	10
Chhatisgarh	132	168	67	11	22

	Base	Wtd Base	Possible	Not possible	Don't know
			%	%	%
Maharashtra	404	411	31	45	24
Konkan	93	67	33	58	9
Desh	100	147	37	36	27
Marathwada	71	103	34	43	24
Vidharbha	140	94	17	54	29

In Gujarat and Maharashtra, death as a result of diarrhoea was not considered possible by the majority. In Madhya Pradesh, on the other hand, the majority considered it possible. If this belief was born of actual experience, it could indicate a lower incidence of diarrhoeal death in Gujarat and Maharashtra as compared to Madhya Pradesh. (Table 63)

2.3.4 Cause of Death

As many as 35% of the women did not know the cause of death during a diarrhoeal episode.

	All-India	West zone	Gujarat	M.P.	Maharashtra
Base	5310	1169	296	456	417
Wtd Base	5308	1059	216	422	422
	%	%	%	%	%
Don't know	25	35	43	14	52
Weakness	32	26	10	35	24
Lack of timely Medical help	16	19	17	32	6
Loss of water	9	8	11	5	10
Loss of blood	9	8	3	9	10
Fever	5	5	3	5	5
God's will	8	4	2	7	3

Awareness of dehydration (loss of water) was particularly low in Chhatisgarh. Awareness in Desh, Gujarat Plains, Saurashtra, and Bundelkhand was higher than both the West Zone and the national average.

Many women seemed to perceive a link between fever and diarrhoea. Fever was seen as a symptom that caused concern and indicated the need for medical help and, to a lesser extent, as a possible cause of death during a diarrhoeal attack.

In Gujarat and Maharashtra, 43% and 52% respectively said that they did not know what the cause of death could be, while in Madhya Pradesh both weakness and lack of timely medical help were believed to be the causes. Respondents in Madhya Pradesh clearly had greater experience of diarrhoeal deaths since they did not have to give a "don't know" reply. It is possible, therefore, that they had reason to believe that they recognized the factors that caused death.

2.4 ATTITUDE TO FOOD AND FLUID DURING LOOSE MOTIONS

2.4.1 Breastfeeding

All respondents were asked for their views on whether a normally breastfed infant who was suffering from diarrhoea should be breastfed. The responses received were as follows :

	All-India	West zone	Gujarat	M.P.	Maharashtra
Base	5310	1169	296	456	417
Wtd Base	5308	1059	216	422	422
	%	%	%	%	%
Should be continued	70	72	43	79	81
Should be increased	1	2	4	1	2
Should be reduced	4	10	30	4	5
Should be stopped	19	10	10	10	9

In Saurashtra, many (46%) felt that breastfeeding should be reduced. The belief that breastfeeding should be stopped was more evident in the Gujarat plains (10%), Bundelkhand (13%) and Marathwada (13%). However, all these proportions were lower than the national average of 19% who believed that breastfeeding should be stopped. There were very few (22 mothers) who did not have an opinion on the subject.

The belief that breastfeeding should be continued was more prevalent in the smaller villages (73%) than the larger (67%) and were among the illiterate (74%) than fluent readers (62%). Similarly, the belief that breastfeeding should be stopped was more common in the larger villages and among the more literate.

(Table 65)

2.4.2 Food During Loose Motions

8 out of 10 women said that a child suffering from loose motions should be given food. Figures for the Gujarat plains were higher (94%) while those for Desh and Vidharbha were lower.

At least one-fourth of the women in Desh, Marathwada and Vidharbha felt that feeding ought to be discontinued.

As in the case of breastfeeding, mothers in the larger villages and those who could read more fluently were less willing to feed their children during about of diarrhoea.

The most common reasons cited for not feeding the child were:

because food worsened the diarrhoeal problem (69%); and
because the digestive system was too weak for food (14%).

	Base	Wtd Base	Feeding during diarrhoea Yes	No	Don't know
			%	%	%
All-India	5310	5308	74	23	3
West Zone	1169	1059	81	18	1
Gujarat	296	216	90	9	1
Madhya Pradesh	456	422	84	15	1
Maharashtra	417	422	73	24	2

(Tables 93, 94)

2.4.3 Fluids During Loose Motions

Fluids were given during diarrhoea, many believed, to stop loose motions. An almost equal number did not know why fluids were administered to a child with diarrhoea. The expectation that fluids would stop stools was much higher

in Gujarat than in Madhya Pradesh or Maharashtra. The West Zone expectation that fluids would stop stools was higher than the national average.

	All-India	West zone	Gujarat	M.P.	Maharashtra
Base	5310	1169	296	456	417
Wtd Base	5308	1059	216	422	422
	%	%	%	%	%
To stop stools	19	30	40	31	25
To give strength	19	15	21	18	8
Don't know	20	29	16	22	42

The role of fluids was related to the more obvious symptoms of diarrhoea (frequent motions and weakness).

Very few mentioned that fluids were meant to replace water that was lost. However, the size of the village and the reading ability had some positive influence on awareness of the rehydration function of fluids.

(Table 70)

2.5 TREATMENT

2.5.1 Advice

All respondents were asked if, during this recent diarrhoeal episode, they had sought advice from any person on its management.

43% of the respondents in the West Zone had sought advice. The propensity to seek advice was higher in Madhya Pradesh than in the other two states. Details were as follows :

	All-India	West zone	Gujarat	M.P.	Maharashtra
Base	5310	1169	296	456	417
Wtd Base	5308	1059	216	422	422
	%	%	%	%	%
Advice sought					
Yes	42	43	35	49	42
No	58	57	65	51	58

(Table 43)

The main persons from whom advice had been sought were the husband and the mother-in-law.

2.5.2 Treatment

64% of all respondents had sought treatment for their child during this last episode of diarrhoea. The details, by state, were as follows :

Treatment sought	All-India	West zone	Gujarat	M.P.	Maharashtra
Base	5310	1169	296	456	417
Wtd Base	5308	1059	216	422	422
	%	%	%	%	%
Yes	65	64	59	67	63
No	35	36	41	33	37

Respondents in Bundelkhand seemed to seek treatment more often than in any other region (83%) of the West Zone. 70% of the respondents in Desh region of Maharashtra had also sought treatment.

Before we move on to details of treatment sought it would be interesting to see if respondents who had sought advice had also sought treatment. Cross tabulation of West Zone respondents reveals the following :

Treatment sought	Advice sought	% figure
Yes	Yes	37
Yes	No	27
No	Yes	6
No	No	29

(Table 14crs)

Thus, 29% of the respondents had sought neither advice nor treatment. 37% had sought both advice and treatment. Only 6% had depended on just advice while 27% had preferred to seek treatment directly, without asking for advice.

Of those who had sought treatment in the West Zone, 49% had sought treatment in the village, and 54% had sought treatment outside the village. Thus, some mothers had sought treatment in the village as well as outside.

Those mothers who had not sought treatment were asked to talk of what they would have done if treatment had been required. Their responses have been termed "hypothetical". Thus, under the columns of actual and hypothetical, all responses have been given below:

	Actual	Hypothetical	Total
Wtd Base :	679	380	1059
	%	%	%
Doctor Allopathic	47	44	46
Doctor Ayurvedic	12	3	9
Doctor Allopathic + Ayurvedic	2	3	2
Doctor - type not known	15	19	17
Vaid/Hakim	4	-	2
Health worker/Para-medical	8	8	8
Health centre	12	15	13
Witch doctor/Godman	1	2	1
Don't know	-	3	1

The village doctor, usually one who practiced "allopathy" (with or without ayurveda) was referred to by half of all those who sought treatment. An additionnal 15% went to a doctor though they could not specify the school of medicine practiced by him. However, 76% of all those who sought treatment had gone to the local "doctor". Only 20% had gone to a representative of the government health network.

These data differ by region. Persons actually referred to in each region are given below :

% across	Base	Allo-pathic	Ayur-vedic	Allo-pathic +Ayur-vedic	Type not known	Total	Govt Health Net Work
All-India							
West Zone	752	47	12	2	15	76	19
Gujarat	177	33	7	4	42	86	11
Kutch	66	46	8	-	41	95	3
Saurashtra	55	36	2	-	58	96	4

% across	Base	Allo-pathic	Ayur-vedic	Allo-pathic +Ayur-vedic	Type not known	Total	Govt Health Net Work
Plains	56	29	11	7	30	67	16
Madhya Pradesh	313	42	22	1	4	69	18
Malwa	81	62	10	1	11	84	11
Bundelkhand	138	51	27	1	4	83	3
Chhatisgarh	94	23	26	-	1	50	35
Maharashtra	262	59	4	2	14	79	25
Konkan	59	24	3	-	53	80	20
Desh	71	79	4	-	3	86	22
Marathwada	41	49	5	5	7	66	27
Vidharbha	91	57	3	4	13	77	31

In the West Zone, the dependence on private practitioners was very high, with some regions such as Chhatisgarh, Gujarat plains and Maharashtra being exceptions. In Chhatisgarh and in Maharashtra state there was high dependence on the government health network.

2.5.3 Expenditure on the Treatment

On an average, the West Zone mother spent Rs. 31 on the treatment given. This was expenditure as perceived by the mother and could have included other costs such as transport or special food bought. It does, nevertheless, amount to a substantial amount.

The average amount spent by mothers in each region was as follows :

	Base	Average Rs. spent
All-India	3983	38
West Zone	604	31
Gujarat	123	34
Kutch	41	13
Saurashtra	38	44
Plains	44	29
Madhya Pradesh	271	31
Malwa	64	33
Bundelkhand	124	30
Chhatisgarh	83	30
Maharashtra	210	30
Konkan	48	39
Desh	61	24
Marathwada	27	32
Vidharbha	74	29

(Table 48.i)

2.5.4 Treatment Received

Those who had seen a doctor (as different from a *vaid, hakim,* chemist, black magician, godman, etc.) had received tablets, mixtures and syrups, and injections.

Across all regions, the tendency to give tablets and injections emerged as being stronger than the national average.

Oral rehydration salts had received high mention from Maharashtra (11%), particularly from the Marathwada region (19.5%) followed by Desh (11%) and Vidharbha (9%) regions. In Madhya Pradesh only 4% of the

respondents had received ORS, while in Gujarat, none of the respondents mentioned ORS. The details are as follows :

	All-India	West zone	Gujarat	M.P.	Maharashtra
Base	3426	752	177	313	262
Wtd Base	3466	679	128	284	267
	%	%	%	%	%
Treatment received:					
Mixture/syrup	54	55	50	63	50
Tablet	71	81	85	84	76
Capsules	9	11	11	15	7
Injection	40	54	44	58	53
Powdered medicine (except ORS)	18	12	4	21	6
ORS	6	6	-	4	11

2.5.5 Oral Rehydration

Respondents were finally asked whether they or the doctor had given the child any powder mixed with water or any other special drink during the last diarrhoeal episode.

The majority (74%) said that this had not been done.

	All-India	West zone	Gujarat	M.P.	Maharashtra
Base	5310	1169	296	456	417
Wtd Base	5308	1059	216	422	422
	%	%	%	%	%
Yes	20	17	15	15	21
No	75	74	82	80	64
Don't know	5	9	3	5	15

3. PRACTICES

3.1 INCIDENCE OF LOOSE MOTIONS

3.1.1 Period of Occurrence

A fourth of the youngest children were suffering from a diarrhoeal episode at the time of interview, while another quarter had had one some time in the previous two weeks. In only a tenth of the cases had the youngest child not had an attack of diarrhoea during the preceding two months.

One out of every 4 women in the West Zone had a child who had diarrhoea at the time of the interview, while another 30% had suffered an attack less than two weeks earlier. Thus, during the winter of 1986-87 (when data were collected), a child had had a very recent attack in more than half the households.

3.1.2 Type of Loose Motions Experienced

The most common type was, "Loose/thin motions" (39%). However in Gujarat and Madhya Pradesh, the most often described type was "Watery/ Water-like diarrhoea".

Mothers in the West Zone described their child's last episode of diarrhoea as :

	West Zone
Base	1169
Wtd Base	1059
	%
Loose/thin motions	39
Watery motions	33
Green motions	18
Yellow motions	9
White/milky motions	9
Separate/grain like/curdled/ seed-like	8

(Table 18)

3.2 PRACTICES WITH REGARD TO FOOD

3.2.1 Normal Diet

The most commonly mentioned items in the normal diet of children were :

	All-India	West zone	Gujarat	M.P.	Maharashtra
Base	5310	1169	296	456	417
Wtd Base	5308	1059	216	422	422
Normal food	%	%	%	%	%
Breast milk	67	65	62	60	73
Rice	50	32	23	37	31
Milk	29	29	42	19	32
Chapati/roti	25	24	14	40	12
Dal	20	23	16	35	13
Vegetables	21	17	10	21	15
Tea	11	11	19	11	8

No other type of food was mentioned by more than 10% of the women.

Breast milk was more often mentioned in all the regions of Maharashtra, while it was less common in Malwa and Bundelkhand.

67% of the respondents had children who were one and a half years old or less. Since an almost identical number of mothers also said that breast milk was a part of the normal food that they gave their children it is reasonable to assume that most women in western India breastfed their children for as long as 18 months.

By the same reasoning, in Bundelkhand, Chhatisgarh and Konkan, women continued to breastfeed their children for about one and a half to two years. In all the other regions, women breastfed their children for 12 to 18 months.

Rice was particularly popular in Konkan, whereas its use was more restricted in Gujarat, and Kutch in particular.

Milk as a part of a child's normal diet was more common in Gujarat and Maharashtra. Its use was more noticeable in Saurashtra and Desh. Very few children in Chhatisgarh were given milk.

Chapati/roti was not very much a part of normal diet in Gujarat and Maharashtra, but most women in Malwa and Bundelkhand fed their children with it.

Dal too, was more a part of the normal diet in Malwa and Bundelkhand, and not very commonly fed to children in Gujarat and Maharashtra (particularly in Kutch and Marathwada).

Vegetables: The use of vegetables was higher in Bundelkhand (40%) and Malwa (22%) than in Chhatisgarh (10%) or any of the regions of Gujarat (10%).

Tea was fed to children more often in Gujarat (Kutch and Saurashtra : 25% each), than Madhya Pradesh. Most women in Maharashtra preferred not to give tea to their children (8%).

It would be interesting to add up figures for breast milk and ordinary milk in order to see whether every child in each region is getting one or the other.

	Breast Milk	Milk	% by which total fell short of or exceeded - 100%
	%	%	
West Zone	65	29	-6
Gujarat	62	42	+4
Kutch	70	39	+9
Saurashtra	61	48	+9
Plains	62	38	-

	Breast Milk	Milk	% by which total fell short of or exceeded - 100%
Madhya Pradesh	60	19	-21
Malwa	48	23	-29
Bundelkhand	55	29	-16
Chhatisgarh	71	9	-20
Maharashtra	73	32	+5
Konkan	72	38	+10
Desh	72	40	+12
Marathwada	78	26	+4
Vidharbha	68	19	-13

Thus, in all regions of Madhya Pradesh and in Vidharbha region of Maharashtra, not all of the children in our study sample got milk. In Malwa, as many as 29% of the children got neither breast milk nor ordinary milk.

(Table 19)

3.2.2 Diet During Diarrhoea

Food	Normal %	Diarrhoea %
Breast milk	65	64
Rice	32	26
Milk	29	23
Chapati/roti	24	18
Dal	23	18
Vegetables	17	12
Tea	11	9
Any type of fluid	1	4

Breast milk was almost invariably continued, and reductions were noticeable only in Desh and Vidharbha.

There was some difference in the types of food given by women in different regions to their children when they had diarrhoea. The most common food (other than breast milk) given by more than 10% of the mothers were :

Kutch	Tea, milk, *khichri,* millet, wheat, *lassi,* biscuits.
Saurashatra	Milk, tea, fluids, *khichri,* rice, millet, wheat, biscuits.
Gujarat Plains	Milk, rice, tea, *khichri, jowar,* wheat.
Bundelkhand	*Roti,* vegetable, *dal,* rice, milk, *khichri,* wheat.
Chhatisgarh	Rice, *dal, roti.*
Konkan	Rice, milk, fluids, *dal, roti.*
Desh	Milk, rice, *jowar.*
Marathwada	*Jowar,* milk, rice.
Vidharbha	Rice, milk, *jowar,* vegetables.

(Different kinds of food have been listed in descending order of popularity).

(Table 20)

3.2.3 Cooking Methods

Very few mothers changed the method of cooking food for a child having diarrhoea. 53% of all mothers in the West Zone said they did not make any

changes, and only 7% said they made some changes. The remainder (40%) were unable to make any statement, possibly because they were referring to solely breastfed children for whom the issue of cooking did not arise.

Separating these mothers from the rest, the responses by state were :

	All-India	West zone	Gujarat	M.P.	Maharashtra
Wtd Base	3508	616	129	281	207
	%	%	%	%	%
Yes, made changes	19	12	14	9	16
Made no changes	81	88	86	91	85

Where changes were made, food was made 'more liquid' and softer.

(Table 21)

3.2.4 Quantity of Food

Most women made no change in the quantity of food given each time, but those who did, gave less to a child having diarrhoea.

	All-India	West zone	Gujarat	M.P.	Maharashtra
Wtd Base*	5255	1023	213	420	390
	%	%	%	%	%
More quantity	5	3	5	2	3
Same quantity	50	65	51	76	62
Less quantity	40	25	41	18	23

In Madhya Pradesh and Maharashtra, the majority gave the same quantity of food as normal. In Gujarat, the tendency was to reduce the quantity.

(Table 22)

3.2.5 Changes in Frequency

The same pattern held in this too. Two-thirds of the women made no changes while 23% reduced the frequency of giving food.

Reductions in frequency of feeding were less common in Malwa, Vidharbha and Desh, but more common in Gujarat (all regions) and Konkan.

A cross-tabulation provides a clearer picture of the extent of change in quantity per feed and number of feeds per day :

	West zone		
	Frequency of feeds		
	More often	Same frequency	Less often
Base : 1059			
Quantity of feeds			
More	2	1	-
Same	1	61	1
Less	-	3	21

As many as one out of five women gave their children less food less often, when they had diarrhoea.

(Table 23 and 5 crs)

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* Eligible sample

3.2.6 Reasons for Change

Three reasons accounted for the responses of 80% of the women who did make changes :

	All-India	West zone	Gujarat	M.P.	Maharashtra
Base (Those who made changes)	2587	381	159	105	117
Wtd Base	2651	328	109	99	119
	%	%	%	%	%
Child's demand	34	30	30	25	34
Don't know	20	30	39	17	33
My belief	30	21	19	33	14

Gujarat : In Kutch and Saurashtra, half the women could not say why they made the changes. In the plains, though, most women appeared to be adapting to their childrens' demands (46%).

Madhya Pradesh : In Malwa, most women were unable to state why they made changes.

More than half the women who made changes in feeding practices in Bundelkhand did so in the belief that it was best, while another third changed feeding according to the child's demand.

In Chhatisgarh, 36% said that their child rejected food.

Maharashtra : In Konkan the main reason was the child's demand (49%) followed by "I believe it is better that way" (26%).

Desh differed from Konkan in that the second most common reason was "don't know".

In Marathwada and Vidharbha, half the women had no reason for making the changes they did.

The dominance of the "don't know" reply suggests that respondents were in fact reacting to a situation without knowing the reason for their actions. The reactions could therefore be said to be based on "instinct" which in turn could mean practices learnt over generations and internalized.

3.3 PRACTICES WITH REGARD TO FLUIDS

3.3.1 Water During Diarrhoea

Nearly a fifth of the women (17%) gave no water to children having diarrhoea. Figures, however, were lower in Malwa (8%) and Bundelkhand (11%) but high enough to cause concern in the Gujarat plains (29%).

Of those who did give water the state-wise pattern of quantity of water was:

	All-India	West zone	Gujarat	M.P.	Maharashtra
Base	3974	972	243	392	337
Wtd Base	4006	868	168	356	344
	%	%	%	%	%
Gave more water	36	26	32	26	23
Gave same quantity	45	58	43	62	60
Gave less quantity	17	14	22	10	14

It would be useful to note that of the total number of women interviewed, only 26% gave their children more water during an episode of diarrhoea, while 14% gave less water than usual.

The tendency to give more water than usual was markedly higher than the zonal figure in Kutch (48% of those who gave water). Less water was usual in Saurashtra and the plains of Gujarat and in Konkan.

Some of the more common reasons for giving less water or no water at all were :

	%
Child rejects water	29
Water aggravates diarrhoea	13
Water cools the system	11

(Tables 25-27)

3.3.2 Breastfeeding

67% of the reference children were being breastfed. 67% of all reference children were one and a half years old or less, confirming the earlier hypothesis that in the West Zone, children were breastfed till they were a year and a half old.

Of these breastfed children, most were given the usual amount of breast milk during diarrhoea. 8% of them received more than usual.

However, 17% got less than the usual amount, and figures for Gujarat were higher (32%).

(Tables 28, 29)

	All-India	West zone	Gujarat	M.P.	Maharashtra
Base	3558	775	204	264	307
Wtd Base	3590	711	144	253	315
	%	%	%	%	%
Breast milk					
More	9	8	11	6	9
Same	66	73	56	80	75
Less	25	17	32	13	14

3.3.3 Other Fluids During Diarrhoea

Respondents were asked to name the fluids (other than water and breast milk) that they had given to their child during the recent episode of diarrhoea being studied.

Two-thirds of them had given no other fluid at all. Figures for Chhatisgarh, Bundelkhand and Konkan were higher (three out of four women). For comparison, only 58% of the respondents at the national level had given no fluid during diarrhoea.

The following table presents the fluids given by more than 10% of the women in each region :

GUJARAT

Region	Popular fluids	Nothing (%)
Kutch	Tea (27%), milk (21%) buttermilk (12%)	56
Saurashtra	Tea (38%), milk (33%)	44
Plains	Milk (27%), tea (13%)	60

Region	Popular fluids	Nothing (%)
	MADHYA PRADESH	
Malwa	*Dal* water (13%), Milk (12%)	69
Bundelkhand	Milk (12%)	74
Chhatisgarh	-	80
	MAHARASHTRA	
Konkan	-	76
Desh	Milk (17%)	64
Marathwada	Milk (10%)	64
Vidharbha	Milk (12%)	66

Fluids are listed in decreasing order of popularity.

Milk was usually the main fluid (38%) given. The main fluid preferred most in each region is given below :

Region	Base	Main fluid	No. of respondents
	GUJARAT		
Kutch	4	Tea	2
Saurashtra	47	Tea	25
Plains	49	Milk	26
	MADHYA PRADESH		
Malwa	36	*Dal* water	14
Bundelkhand	31	Milk	14
Chhatisgarh	38	Milk	13
	MAHARASHTRA		
Konkan	17	Rice water, milk	4, 4
Desh	54	Milk	24
Marathwada	38	Milk	10
Vidharbha	33	Milk	11

3.3.4 The Total Picture

The total picture on any liquid given to a child during diarrhoea is different for the child who was breastfed and the child who was not. Cross-tabulation of fluids and/or water given to children during diarrhoea revealed the following picture:

	West Zone	
	Breastfed children	**Non-breastfed children**
Wtd Base	712	347
	%	%
Water + fluid	22	45
Water alone	54	49
Fluid alone	4	2
None	20	5

It is a matter of concern that 5% of the non-breastfed children in the West Zone received neither fluid nor water when they had diarrhoea and that over half of those who did receive any liquid received water alone. It would be useful to study the pattern for each of the three states.

	Gujarat		Madhya Pradesh		Maharashtra	
	BF *	Non-BF	BF	Non-BF	BF	Non-BF
Wtd Base	143	72	252	169	315	106
	%	%	%	%	%	%
Water plus fluid	30	68	13	34	26	47
Water alone	41	29	65	60	52	43
Fluid alone	7	1	4	2	3	1
None	24	1	18	4	19	8

In all three states, breastfed children tended to receive water alone rather than water and fluid. While the practice of giving some fluid to breastfed children was higher in Gujarat than in the other states (37% against 17% in Madhya Pradesh, and 29% in Maharashtra), Gujarat also revealed the highest proportion of mothers who gave neither water nor fluid to breast infants.

The greater concern, however, is with regard to those non-breastfed children who get no liquids or who get only water. In Madhya Pradesh, 60% got only water and 4% got no liquids. In Maharashtra, 43% got only water while 8% got nothing.

In Gujarat, 29% got only water while 1% got nothing. The highest proportion of non-breastfed children getting both fluid and water was in Gujarat (68%) followed by Maharashtra (47%) and Madhya Pradesh (34%).

Fluids given to breastfed children were :

	West Zone
Base	775
Wtd Base	711
	%
Milk	11
Coffee/tea	6
Glucose water	1
SSS	1
Rice water	1
ORS	1

Non-breastfed children received a wider variety of other fluids that included *dal* water and lime water. Also, the use of milk and tea was more common. (Tables 30-32) (Table 15 crs)

3.3.5 Volume of Fluid Given and Frequency

The average amount of fluid given at a time was 100 ml. The average for each region was as follows:

---

* BF – Breastfed

	Main fluid	Average Amount (ml)*
All-India	Milk	100
West Zone	Milk	100
	GUJARAT	
Kutch	Tea	100
Saurashtra	Tea	80
Plains	Milk	80
	MADHYA PRADESH	
Malwa	*Dal* water	120
Bundelkhand	Milk	100
Chhatisgarh	Milk	120
	MAHARASHTRA	
Konkan	Rice water/Milk	80
Desh	Milk	80
Marathwada	Milk	60
Vidharbha	Milk	60

One out of 3 women gave 50 to 100 ml, but only one in 8 gave more than 150 ml at a time.

Most women fed the main fluid to the child two or three times a day (62%), but very few (14%) fed the child more often. Differences between states were not wide but they did exist. In Gujarat, 61% gave fluids only 1-2 times whereas in Madhya Pradesh and Maharashtra the majority gave fluids 2-3 times a day.

3.3.6 Total Fluid Intake During Diarrhoea

Women were asked whether they had given the child more fluids (including water) than normal during the last diarrhoeal episode.

For nearly two-thirds of the children the fluid intake was perceived by the mother to be the same as normal, while the remainder were divided between less and more fluid.

In Gujarat state and in Marathwada region, a quarter of the children received less fluid than usual (the zonal figure was 16%).

The practice of giving more fluids was more common in Kutch and Bundelkhand (one out of three children).

Fluid intake during Diarrhoea

	All-India	West zone	Gujarat	M.P.	Maharashtra
Base	5310	1169	296	456	417
Wtd Base	5308	1059	216	422	422
	%	%	%	%	%
More	24	17	23	18	14
Same	50	62	50	70	61
Less	20	16	25	9	19
Don't know	5	4	3	4	6

(Table 36)

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* These volumes were arrived at on the basis of a 200 ml glass used during interviews. Respondents indicated the fluid level used on that glass.

3.3.7 Reasons for More/Less Fluid

a. More fluids : Women gave more fluid because the child asked for more or because the child was thirsty (50%). Very few fed fluids to the child to replace lost water (4%) or for nourishment (4%) or because they perceived signs of dehydration (9%).
As many as 16% had no reason for the increase they made in fluid intake. This could point to a traditional practice that had been unquestioningly accepted.

b. Less fluids : An important reason for giving less fluids was the belief that water would aggravate diarrhoea (21%).
One-tenth of the women did not know why fluid intake was reduced.
(Tables 37 and 38)

3.4 POST-DIARRHOEAL APPETITE

	Base*	Wtd Base	More hungry than usual %	Less hungry than usual %	As hungry as usual %
All-India	3983	3989	40	12	45
West Zone	850	786	36	10	47
Gujarat	185	145	54	7	35
Kutch	59	5	64	15	20
Saurashtra	58	54	62	5	28
Plains	68	86	49	7	40
Madhya Pradesh	381	352	29	9	59
Malwa	117	95	19	13	65
Bundelkhand	141	102	45	6	49
Chhatisgarh	123	156	24	10	63
Maharashtra	284	288	35	12	38
Konkan	70	50	36	16	44
Desh	76	112	43	12	29
Marathwada	43	62	26	12	54
Vidharbha	95	64	31	12	34

Very few children were perceived to be less hungry than usual.

Those who were giving the child more than only breast milk (i.e., some other fluid) were asked what increase/decrease they made in post-diarrhoeal feeding.

Half the women made no change in the quantity of solid food given to the child, while a third increased the quantity.

Increases were more common in the three regions of Gujarat and in Bundelkhand.

14% of the women gave less food. The figure for Desh was higher (29%).

Most women had no reason for reducing the intake of solid food. Others felt that more food would increase stools and cause a re-attack (18 of the 46 women) or that digestion was weak and the system would not be able to cope (6 women).

Let us look at the relationship between the perception of post-diarrhoeal hunger and the amount of solid food given :

---

* Base : All mothers whose child was not suffering from diarrhoea at the time of interview.

	Quantity of food given		
	More food	**Same as usual**	**Less food**
	%	%	%
Perception of hunger			
More hungry	32	4	3
As hungry as usual	-	43	2
Less hungry than usual	-	2	9

By and large women tended to feed their children in accordance with the extent of hunger the child displayed. Yet, 8% of all who were given solid food were perceived to be more hungry than usual but were given less food or no more than the usual quantity.

(Tables 39-42, Table 8 crs)

4. REHYDRATION

4.1 HOME-MADE FLUIDS

A list of fluids was read out and respondents were asked for each one if they considered it appropriate for giving to a child during diarrhoea.

Water was acceptable to most women (89%). However, this response was in answer to a hypothetical question and must be treated with caution, particularly in the light of the fact that, in practice, 18% of the respondents gave no water to their children during diarrhoea (see section 5.3.1).

	% Who said fluid was acceptable				
	All-India	**West zone**	**Gujarat**	**M.P.**	**Maharashtra**
Base	5310	1169	296	456	417
Wtd Base	5308	1059	216	422	422
	%	%	%	%	%
Tea	47	57	80	46	55
Glucose water	68	55	77	54	46
Rice water	45	55	54	68	43
Dal water	39	54	59	68	39
Coffee	25	38	76	4	52
Coconut water	44	33	64	14	35
Lassi/buttermilk	43	32	47	26	30
Potato soup	15	24	30	23	21

(Table 66)

For each fluid, women were asked whether they would, if advised, be willing to add sugar/*gur* and salt. We shall examine the responses given for each of the fluids below. The base figures as given in the table above hold true for all the tables in this section and therefore are not being repeated.

4.1.1 Water

	All-India	**West zone**	**Gujarat**	**M.P.**	**Maharashtra**
	%	%	%	%	%
Will add sugar	42	51	63	37	58
Will add *gur*	19	26	49	19	22
Will add salt	36	42	42	45	40

The problem is that half the women were unwilling to add sugar and a marginally lower proportion did not feel that salt was an acceptable additive. Resistance to sugar was high in Bundelkhand, while that to salt was higher in Bundelkhand and Vidharbha than in other regions.

4.1.2 Tea

	All-India	West zone	Gujarat	M.P.	Maharashtra
	%	%	%	%	%
Will add sugar	47	57	78	51	51
Will add *gur*	22	31	50	30	23
Will add salt	17	23	30	26	16

Salt was not acceptable as an additive in tea. However, as compared to the national average, salt was relatively more acceptable to the respondents in Gujarat and Madhya Pradesh.

4.1.3 Coffee

	All-India	West zone	Gujarat	M.P.	Maharashtra
	%	%	%	%	%
Will add sugar	25	37	80	4	48
Will add *gur*	10	16	44	1	16
Will add salt	5	10	24	1	13

One must bear in mind that 72% of the women in Madhya Pradesh did not know if coffee could be given to a child with diarrhoea. Questions with regard to the addition of sugar, *gur* and salt also received the same answer "don't know".

4.1.4 *Lassi*/Buttermilk

	All-India	West zone	Gujarat	M.P.	Maharashtra
	%	%	%	%	%
Will add sugar	26	29	41	25	28
Will add *gur*	13	12	28	7	9
Will add salt	38	31	51	31	22

Lassi was acceptable in Kutch, the Gujarat plains and in Konkan. Both sugar and salt were acceptable in Kutch and the plains, while only sugar would be added in Konkan (*gur* was also more acceptable here).

4.1.5 *Dal* water

	All-India	West zone	Gujarat	M.P.	Maharashtra
	%	%	%	%	%
Will add sugar	10	19	36	13	17
Will add *gur*	9	20	45	17	11
Will add salt	38	55	64	70	34

Dal water was acceptable to more than half the women in Gujarat and Madhya Pradesh. Traditional practices probably involved the addition of salt. Most women were unwilling to add sugar or *gur*, except in Gujarat where over a third expressed their willingness to add sugar/*gur* to *dal* water.

4.1.6 Coconut Water

This, and the next three fluids discussed here, contain an energy source. Therefore only the acceptability of adding salt was checked.

	All-India	West zone	Gujarat	M.P.	Maharashtra
	%	%	%	%	%
Salt : Yes	12	18	40	10	16
No	52	34	55	30	29
Don't know	35	47	5	60	55

Resistance was high in Kutch, Saurashtra and Konkan (around 65%), while lack of knowledge was widespread in Bundelkhand (77%) and Vidharbha (81%).

4.1.7 Rice water

	All-India	West zone	Gujarat	M.P.	Maharashtra
		%	%	%	%%
Salt : Yes	43	54	55	69	39
No	37	22	45	22	9
Don't know	20	24	-	9	51

Acceptability of rice water was high in Malwa, Bundelkhand and Konkan and this was reflected in the acceptability of salt as an additive to it. In Marathwada and Vidharbha, where rice water was neither given to a child often nor was very acceptable as a fluid to be given during diarrhoea, most women did not know if salt could be added. Resistance to the addition of salt was high in Saurashtra (63%).

4.1.8 Potato Soup

	All-India	West zone	Gujarat	M.P.	Maharashtra
	%	%	%	%	%
Salt : Yes	16	25	39	24	19
No	47	40	57	57	14
Don't know	37	35	4	18	67

Potato soup was not a familiar item for women in western India. The resistance to adding salt could therefore be a function of the unfamiliarity rather than a considered opposition to the concept of adding salt.

4.1.9 Glucose Water

	All India	West zone	Gujarat	M.P.	Maharashtra
	%	%	%	%	%
Salt : Yes	15	17	36	7	18
No	59	47	55	60	29
Don't know	26	36	9	33	53

Resistance to the addition of salt was particularly high (more than 66%) in Kutch, Saurashtra, Bundelkhand, Chhatisgarh and Konkan, while most women in Desh, Marathwada and Vidharbha did not know if salt could be added. (Table 67-69)

4.2 SUGAR SALT SOLUTION (SSS)

4.2.1 Awareness

This section deals with aided awareness of SSS measured in terms of responses to the question on whether mothers had heard of a solution made with sugar/

gur and salt, which is to be given to children having diarrhoea.

Awareness (thus aided) of SSS was low on the whole (17%), and particularly so in Madhya Pradesh (2%), but was high in Desh (41%) and Marathwada (35%). In fact, awareness of SSS in Maharashtra, particularly in Desh/Marathwada, was the highest recorded in the whole country.

Awareness increased with reading ability—more of the fluent readers knew of it (36%) than the slow readers (24%) or the illiterate (11%).

	All-India	West zone	Gujarat	M.P.	Maharashtra
Wtd Base	5308	1059	216	422	422
	%	%	%	%	%
Yes	17	17	16	2	32
No/don't know	83	83	84	98	68

4.2.2 Usages

Knowledge, however, was not always translated into action, since only half of those who were aware had used it.

	Aware of SSS (No. of women)	Used SSS (No. of women)
Gujarat		
Kutch	1	1
Saurashtra	8	5
Plains	24	16
Madhya Pradesh		
Malwa	2	1
Bundelkhand	2	1
Chhatisgarh	5	3
Maharashtra		
Konkan	14	10
Desh	62	29
Marathwada	36	17
Vidharbha	22	6
Total	177	89 = 50%

At the national level, 46% of those who had heard of SSS had used it. The West Zone usage figure at 50% was marginally higher.

Thus, 88 women were aware of SSS but had not used it. They were asked for the reasons why they had not used it.

Most of them (51 women) were unable to give any reason. 16 had not known how to make it, and another 12 women were not sure if it would be of help.

Those who were aware and had used it (89 women) were asked the proportions of sugar, salt, and water they had used. All except 5 were able to to give the formula they had used.

Knowledge thus was uncommon, and practice rare. There were, however, few negative attitudes to SSS. Ignorance was most prominent characteristic.

(Tables 73-75)

4.3 ORAL REHYDRATION SALTS (ORS)

4.3.1 Awareness and Usage

Awareness of ORS was greater than that of SSS (27%). Furthermore, among

those aware, use was higher than that for SSS (74% of those aware).

	Wtd Base	Aware of ORS (No. of women)	%	Used ORS (No. of women)
West Zone	1059	286	27	212
All-India	5308	1978	37	1432
Gujarat				
Kutch	10	4	37	3
Saurashtra	84	32	38	24
Plains	122	29	24	18
Madhya Pradesh				
Malwa	117	34	29	20
Bundelkhand	120	37	31	30
Chhatisgarh	185	28	15	23
Maharashtra				
Konkan	71	23	33	17
Desh	150	47	31	37
Marathwada	104	32	31	26
Vidharbha	97	21	22	15

Finally, although both village size and reading ability had some positive effect on awareness of ORS, this influence was not translated into any effect on usage.

(Tables 76, 77)

4.3.2 Usage Patterns

Of the 212 women who had used ORS in the West Zone, 85% had used it exclusively for children and 10% exclusively for adults.

Method of using ORS : The most common measure used for the powder was the spoon (60% of all ORS users).

	Scoop		Spoon	
	(No.of women)	(Avg. no. used)	(No. of women)	(Avg. no. used)
Gujarat				
Kutch	1	1.1	1	1.2
Saurashtra	6	1.0	15	1.2
Plains	3	1.0	13	1.4
Madhya Pradesh				
Malwa	6	1.3	11	1.2
Bundelkhand	24	1.5	5	0.9
Chhatisgarh	10	1.3	9	1.1
Maharahstra				
Konkan	3	1.1	10	1.1
Desh	3	1.0	34	1.1
Marathwada	6	0.9	17	1.1
Vidharbha	3	1.0	11	1.2

Very few women used pack proportions (5%) or the finger pinch (3%).

Water : Half the women used less than a full glass of water with the powder to make the ORS solution. Exceptions were in M.P.—a full glass of water was often used in all the three regions. (Tables 78-82)

4.3.3 Reasons for Use

The main reasons for using ORS/SSS were:

Reasons	
Base	290
All users of ORS/SSS	262
	%
To stop loose motions	70
Cool the body	14
Prevent weakness	12
Keep the child active	11
Give energy	10

ORS/SSS was expected to have the medical property of stopping loose motions.

The expectation that ORT would cool the body was probably related to the perceived link between diarrhoea and fever, discussed earlier.

The remaining reasons (above) relate to the revitalization of the body.

ORS : Respondents were also asked whether the drink had fulfilled their expectations. The number of those whose expectations were met by ORS have been expressed as a percentage of those who held the expectation, in the table below:

		Those satisfied
Expectations	**%**	**No.of women**
To stop loose motions	88	129
Cool the body	100	36
Prevent weakness	72	19
Keep the child active	64	15
Give energy	96	21

Ten women used ORS because the doctor had advised them, and five used it because water was lost from the body. All of them were satisfied with its effectiveness.

SSS: The number of those whose expectations were met by SSS have been expressed as a percentage of those who held the expectation, in the table below:

		Those satisfied
Expectations	**%**	**No. of women**
To stop loose motions	90	50
Cool the body	100	1
Prevent weakness	62	7
Keep the child active	69	7
Give energy	100	5
Prevent worsening of the problem	100	8

4.3.4 Method of Use

(a) Commencement : Most women believed that ORS/SSS should be started immediately or within a few hours (63%).

It is also heartening to note that very few women (12%) believed that they should wait more than two days or wait till the primary symptoms

such as thirst, weakness, irritability, increase in loose motions were aggravated.

(b) Number of times per day : Many users of ORT (33%) felt that a frequency of three times a day was the ideal frequency for administering ORT, while nearly half (47%) believed that the drink should be given four or more times or as and when required by the child. Statewise differences were as follows:

	ORT Users						
	Base	Wtd Base	Once or twice	Three times	Four or more times	Whenever child asks/ is thirsty	After every loose motion
West Zone	290	262	15	33	28	12	7
Gujarat	87	60	14	29	25	18	3
M.P.	86	74	7	18	50	15	10
Maharashtra	117	128	21	43	18	7	6

(c) Quantity of drink at a time : Once again, the 200 ml glass was used as the basis for measurement.

Although 50-100 ml was the most commonly used quantity (41%) of drink given at a time, many (33%) also gave less than 50 ml each time.

The full glass of 200 ml was common only in M.P. (29%).

There were very few users (5%) who could not say how much solution they gave their child each time.

Women who used ORT seemed to be quite aware of its method of use. It would be useful to keep in mind, though, that users of ORS/SSS constituted just about a quarter of the sample. (Tables 84-90)

4.4 INGREDIENTS FOR HOME-MADE FLUIDS

Sugar was always available at home in most households in the West (64%), though many others (26%) bought it whenever necessary.

It was present in the kitchen in three-fourths of the households at the time of the interview.

Regional differences were as follows:

	Always at home	Buy when needed	Spot Check Positive
Gujarat	%	%	%
Kutch	93	-	95
Saurashtra	92	2	94
Plains	63	24	66
Madhya Pradesh			
Malwa	65	13	80
Bundelkhand	24	69	72
Chhatisgarh	9	60	54
Maharashtra			
Konkan	75	11	77
Desh	85	12	86
Marathwada	88	6	76
Vidharbha	85	10	79

Gur was not as often stocked at home. Furthermore, it was never bought, in about an eighth of the households.

Gur was stocked more commonly in Kutch, Saurashtra, and Malwa.

In the spot check, 56% of the households had *gur,* but it was more common in Kutch, Saurashtra, Malwa and Bundelkhand (over 70% each).

Coarse Salt was, reportedly, always available at home in 60% of the households, but was regularly stocked by more households in Gujarat (75%) and Maharashtra (96%).

The spot check revealed that it was present in most houses in Gujarat (77%) and Maharashtra (94%) but rather rare in Malwa (29%) and Chhatisgarh (39%).

Powder salt was not as popular (always at home : 41%) as coarse salt. It was never bought in 30% of the households (Bundelkhand 55%, Marathwada 53%).

In the spot check, powder salt was not present in more than half the households (Bundelkhand: 77%).

Rice was always available at home in most houses (76%) but was even more popular in Chhatisgarh (90%), Konkan (95%) and Desh (85%). Its use was less common in Marathwada, where 13% of the women had never bought it.

The spot check revealed little difference.

Dal was always stocked in 77% of the households, except in Gujarat (65%). There were very few who never bought *dal* (19 women).

It was actually present in around 80% of the houses everywhere except Kutch (67%) and the Gujarat plains (63%), as revealed by the spot check.

Potatoes were usually bought according to need (40%), but were always stocked in many houses in Saurashtra (46%), Bundelkhand (49%) and Konkan (43%). It was never bought by 28% of the women in Marathwada.

The spot check revealed that only about 2 out of 5 households had potatoes at the time. Figures were even lower in Malwa (27%), Marathwada (24%) and Vidharbha (30%).

Bananas were usually bought when necessary (52%), but were never bought in a quarter of the houses.

In the spot check, there were no bananas at the time in nine out of ten houses.

Roots/Tubers were usually bought when necessary (42%), but were never bought in nearly a third of the houses. Two-thirds of the houses in Desh, Marathwada and Vidharbha never bought any.

In the spot check, only one out of five houses had roots/tubers in the kitchen. The exception was Gujarat, where it was present in nearly half the homes.

Tea : Two-thirds of the households always had tea with them while most others bought it when necessary. The use of tea was less common in Bundelkhand and Chhatisgarh (buy when necessary — 67% and 59%).

In the spot check, more than three-fourths of the houses had tea except in the Gujarat plains (68%) and Chhatisgarh (52%).

Coffee was not a familiar beverage in western India and was never bought in 43% of the houses. It was more popular in Kutch and Saurashtra.

Coffee was present in only one out of eight houses. Figures were higher for Kutch (42%) and Saurashtra (44%) but much lower in M.P. (3%).

Milk was always stocked at home in two out of three houses, while another 21% bought it when necessary.

Most houses (74%) did have milk — verified by spot check.

Regional figures were as follows:

	Always at home %	Buy when needed %	Spot Check %
Gujarat			
Kutch	89	1	91
Saurashtra	88	4	87
Plains	65	16	67
Madhya Pradesh			
Malwa	82	12	85
Bundelkhand	43	49	74
Chhatisgarh	30	53	47
Maharashtra			
Konkan	50	20	51
Desh	89	7	81
Marathwada	94	1	92
Vidharbha	88	6	90

(Tables 91,92)

4.5 INFLUENCERS IN THE VILLAGE

To find out who would be most effective in teaching rural people the correct methods of diarrhoea management, a list of possible influencers was drawn up. These influencers were:

The Village Health Guides : male and female;
The Multipurpose Health Workers : male and female;
The *Dai*;
The Anganwadi Worker;
The School Teacher.

Women were asked which of these workers were present in the village and the extent of confidence they would have in the advice tendered by those present.

4.5.1 Available

6% of the women said that their village had none of these influencers. Figures were higher in Bundelkhand (15%) and Desh (14%). Zonal scores for the various possible influencers were:

	Available %
School teacher	75
Dai	49
Anganwadi Worker	36
MHW (Male)	36
MHW (Female)	29
VHG (Male)	29
VHG (Female)	25

Regional figures were as follows:

	VHG (M)	VHG (F)	Teacher	*Dai*	Anganwadi worker	MHW (M)	MHW (F)
Gujarat							
Kutch	30	8	98	82	86	4	31
Saurashtra	22	6	98	77	68	18	30
Plains	6	17	96	75	79	19	41
Madhya Pradesh							
Malwa	31	2	31	26	31	31	1
Bundelkhand	35	17	69	66	8	8	-
Chhatisgarh	33	24	76	34	22	27	-
Maharashtra							
Konkan	11	43	99	72	51	25	32
Desh	36	50	74	34	30	61	65
Marathwada	43	29	63	22	8	65	40
Vidharbha	37	32	83	63	47	77	72

4.5.2 Confidence in the Person

Responses about the extent of confidence were recorded on a range of : Feel Confident, Unsure, Not Confident. Assigning a score of 3 to "feel confident", a score of 2 to "unsure" and 1 to "not confident," the overall confidence score for each type of worker was:

	Confidence Score
VHG (Male)	2.66
VHG (Female)	2.71
School teacher	2.61
Dai	2.53
Anganwadi Worker	2.64
MHW(Male)	2.74
MHW(Female)	2.75

(Tables 95, 96)

Given that those influencers would have the highest potential to contribute to this effort who not only commanded confidence but were also available in a larger proportion of villages, it would be necessary to look at the scores achieved by combining availability with confidence. The results are given below.

	Confidence × score	Available = %	Total
Influencer			
School teacher	2.61	75	1.96
Dai	2.53	49	1.24
Anganwadi worker	2.64	36	0.95
MHW (Male)	2.74	36	0.99
MHW (Female)	2.75	29	0.80
VHG (Male)	2.66	29	0.77
VHG (Female)	2.71	25	0.68

The school teacher, *dai* and MHW (Male) emerged as the three influencers who potentially have the best combination of being available and commanding confidence in theWest zone.

Diarrhoea in Rural India is a 5-volume publication. The following is the coverage and scope of each volume:

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Covers Assam, Bihar, Orissa, West Bengal.

pages: 280, *size:* Royal Octavo: (9½" x 6¼") *hardcover, cloth-bound*

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ISBN 81-7094-054-0

DIARRHOEA IN RURAL INDIA

Diarrhoea is a major killer of children in the developing countries of the world, accounting for a third of all deaths. In India, it claims upto 1.5 million deaths every year, of which according to WHO estimates, some two-thirds could be reliably averted: a formidable challenge to the country's medical professionals and health care system.

Oral rehydration therapy (ORT) developed in the 1960s held out the promise of rapid, sustained, and dramatic fall in diarrhoea deaths. During the past 20 years, however, this expectation has not been fulfilled, prompting the Ministry of Health and Family Welfare to initiate a massive study to find out the reasons for this. This 5-volume publication documents the findings of the ensuing 3-year research project, which was conducted by IMRB with financial assistance and technical guidance from UNICEF.

Diarrhoea in Rural India offers the most detailed and in-depth information base possible on the subject, not only on a national scale but, also, uniquely for each state in the country. It documents the prevalent knowledge, attitudes and practices regarding diarrhoea and its treatment among rural mothers and practitioners. Alternate lines of treatment used such as homoeopathy, ayurveda, and home remedies, as well as the feeding and hygiene practices followed have also been recorded in great detail. The findings have already led to a major restructuring of the National Diarrhoea Management Plan. What this 5-volume publication offers, thus, is a comprehensive analysis of the very serious but not insurmountable problems which exist in the way of applying ORT, a powerful medical principle, on a country-wide scale.

Drawing on the wide range of existing medical experience, this study fills in the knowledge gaps and charts the lesser-known aspects of the treatment of this disease in rural India. In addition, it also provides the framework for correcting the facets of medical treatment and improving diarrhoea management by doctors, druggists, mothers, hospitals and other health professionals, including voluntary health workers.

"We believe this study presages a sustainable and effective diarrhoeal disease control programme in India."

MEERA SETH
Special Secretary (Family Welfare)
Ministry of Health and Family Welfare

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